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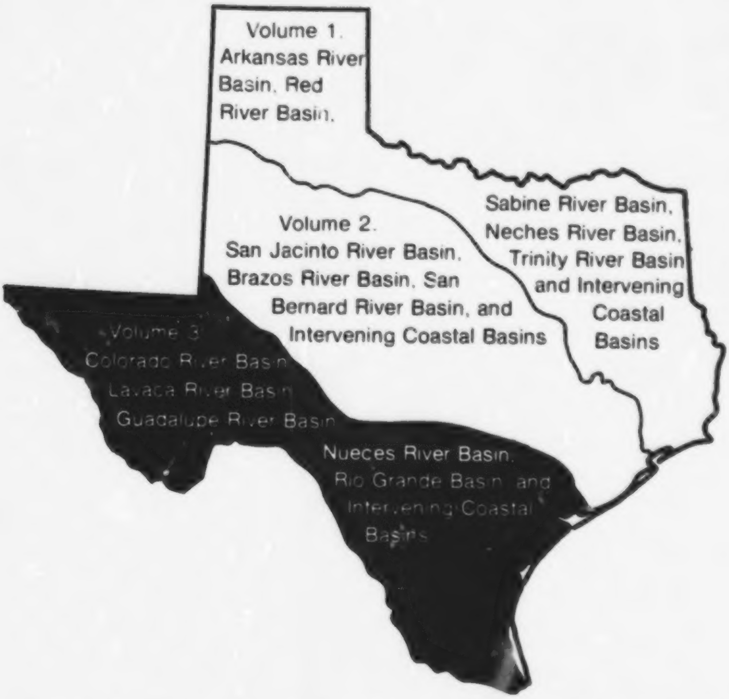
Water Resources Data
Texas
Water Year 1986

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins


Volume 1.
Arkansas River Basin, Red River Basin.
Volume 2.
San Jacinto River Basin, Brazos River Basin, San Bernard River Basin, and Intervening Coastal Basins
Sabine River Basin, Neches River Basin, Trinity River Basin and Intervening Coastal Basins
Volume 3
Colorado River Basin
Lavaca River Basin
Guadalupe River Basin
Nueces River Basin,
Rio Grande Basin, and
Intervening Coastal
Basins

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-86-3
Prepared in cooperation with the State of Texas
and with other agencies

COMPLETED

ORIGINAL

CALENDAR FOR WATER YEAR 1986

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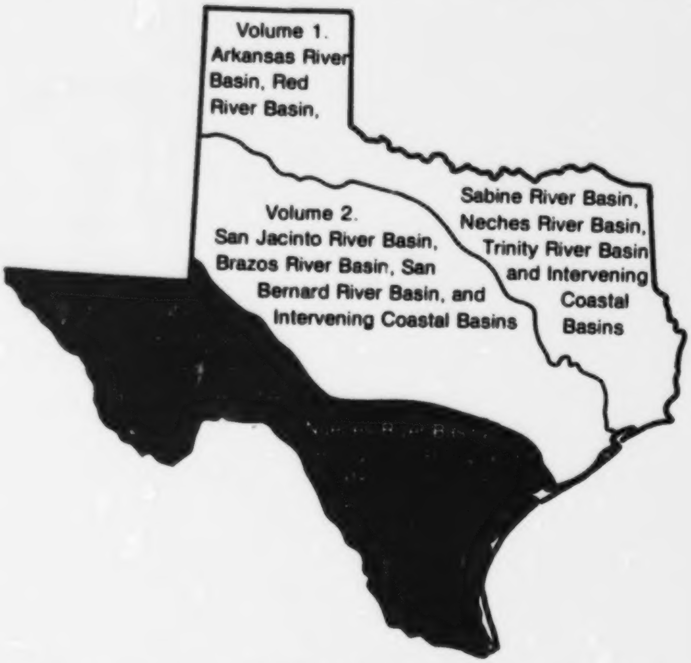
U.S. DEPARTMENT OF THE INTERIOR
March 3 1849

Water Resources Data
Texas
Water Year 1986

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins

by H.D. Buckner, E.R. Carrillo, and H.J. Davidson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U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-86-3
Prepared in cooperation with the State of Texas
and with other agencies

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UNITED STATES DEPARTMENT OF THE INTERIOR

DONALD PAUL HODEL, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information write to
District Chief, Water Resources Division
U.S. Geological Survey
300 East 8th Street
Austin, Texas 78701

1987

Preface

This volume of the annual hydrologic data report of Texas is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. Records of streamflow and quality-of-water data required to provide the hydrologic information needed by State, local and Federal agencies, and the private sector for developing and managing land and water resources in Texas are contained in 3 volumes:

Volume 1. Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, Trinity River Basin, and intervening and adjacent Coastal Basins

Volume 2. San Jacinto River Basin, Brazos River Basin, San Bernard River Basin, and intervening Coastal Basins

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and intervening Coastal Basins

This report is the culmination of a concerted effort by dedicated personnel of the Texas District, U.S. Geological Survey, who collected, compiled, analyzed, verified, and organized the data, typed, edited, and assembled the report, and who assured that the information contained here is accurate, complete, and adheres to Geological Survey policy and established guidelines.

This report was prepared in cooperation with the State of Texas and other agencies under the supervision of C. W. Boning, District Chief.

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WATER RESOURCES DATA - TEXAS, 1986

VOLUME 3

COLORADO RIVER BASIN, LAVACA RIVER BASIN, GUADALUPE RIVER BASIN, NUECES RIVER BASIN, RIO GRANDE BASIN, AND INTERVENING COASTAL BASINS

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with Federal, State, and City agencies, obtains a large amount of data pertaining to the water resources of Texas each water year. Such data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in three volumes of this report series entitled "Water Resources Data - Texas."

This report series includes records of stage, discharge, and water quality of streams and canals; stage, contents, and water quality of lakes and reservoirs. Volume 3 contains records for water discharge at 152 gaging stations; stage only at 1 gaging station; stage and contents at 19 lakes and reservoirs; and water quality at 91 gaging stations. Also included are data for 28 partial-record stations. Additional water data were collected at 4 miscellaneous sites not involved in the systematic data-collection program. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Texas.

This series of annual reports for Texas began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report was changed to its present format with data on quantities and quality of surface water contained in each of three volumes.

Prior to introduction of this series and for several water years concurrent with it, water resources data for Texas were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 7 and 8." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Books and Open-File Reports, Federal Center, Bldg. 41, Box 25425, Denver, CO 80225.

Publications similar to this report are published annually by the Geological Survey for all States. These official Geological Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water Data Report TX-86-3." For archiving and general distribution, the reports for the 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or may be purchased on microfiche from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including the current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (512) 482-5571.

COOPERATION

Federal agencies that assisted the Geological Survey in the collection of data in this report in the form of funds or services in 1986 are:

Corps of Engineers, U.S. Army.

International Boundary and Water Commission, United States and Mexico, U.S. Section.

U.S. Bureau of Reclamation.

Organizations that assisted in the collection of data in this report through joint funding agreements through the Texas Department of Water Resources or through direct joint-funding agreements with the Gological Survey are:

Texas Water Development Board, C. E. Nemir, Executive Administrator; the cities of Abilene, Alice, Arlington, Austin, Carrollton, Corpus Christi, Dallas, El Paso, Gainesville, Garland, Georgetown, Graham, Houston, Lubbock, Nacogdoches, Runaway Bay, San Angelo, San Antonio, and Wichita Falls; Athens Municipal Water Authority; Bexar, Medina, and Atascosa Counties Water Control and Improvement District No. 1; Bistone Municipal Water Supply District; Brazos River Authority; Coastal Industrial Water Authority; Colorado River Municipal Water District; Dallas County; Dallas Public Works Department; Dallas/Fort Worth Airport; Dallas Utilities Water Department; Edwards Underground Water District; Fort Bend County, Franklin County Water District; Galveston County; Greenbelt Municipal and Industrial Water Authority; Guadalupe-Blanco River Authority; Harris County Flood Control District; Harris-Galveston Coastal Subsidence District; Lower Colorado River Authority; Lower Neches Valley Authority; MacKenzie Municipal Water Authority; North Central Texas Municipal Water Authority; Northeast Texas Municipal Water District; Orange County; Pecos River Commission; Red Bluff Water Power Control District; Reeves County Water Improvement District No. 1; Sabine River Authority of Texas; Sabine River Compact Administration; San Antonio City Public Service Board; San Antonio City Water Board; San Antonio River Authority; San Jacinto River Authority; Tarrant County Water Control and Improvement District No. 1; Texas Parks and Wildlife, Titus County Fresh Water Supply District No. 1; Trinity River Authority; Upper Guadalupe River Authority; Upper Neches River Municipal Water Authority; Upper Trinity Basin Water Quality Compact; West Central Texas Municipal Water District; Wichita County Water Improvement District No. 2; Willow Fork Drainage District; and Wood County.

HYDROLOGIC CONDITIONS

Large variations in precipitation, runoff, and streamflow characterize the usual hydrologic conditions in Texas. In the eastern part of the State, streams generally are deep with wide alluvial flood plains, and streamflow is perennial. In the western part of the State, streams generally flow through arroyos, and streamflow principally is ephemeral.

Precipitation during the 1986 water year generally was in the normal range except for the period November through April when drier than usual conditions existed in most areas. January 1986 was extremely dry, with many stations reporting no precipitation during the month. In June, extensive precipitation occurred in parts of south-central Texas. San Antonio received 11.95 inches (6.30 inches in a 24-hour period), setting a new record for the month of June. Unusual weather features for the year included an uncommonly warm winter and the scarcity of tropical storms, which can produce intense precipitation along their paths. "Bonnie", the only tropical storm to enter the State during the year, yielded only moderate precipitation along its path across southeast Texas in late June.

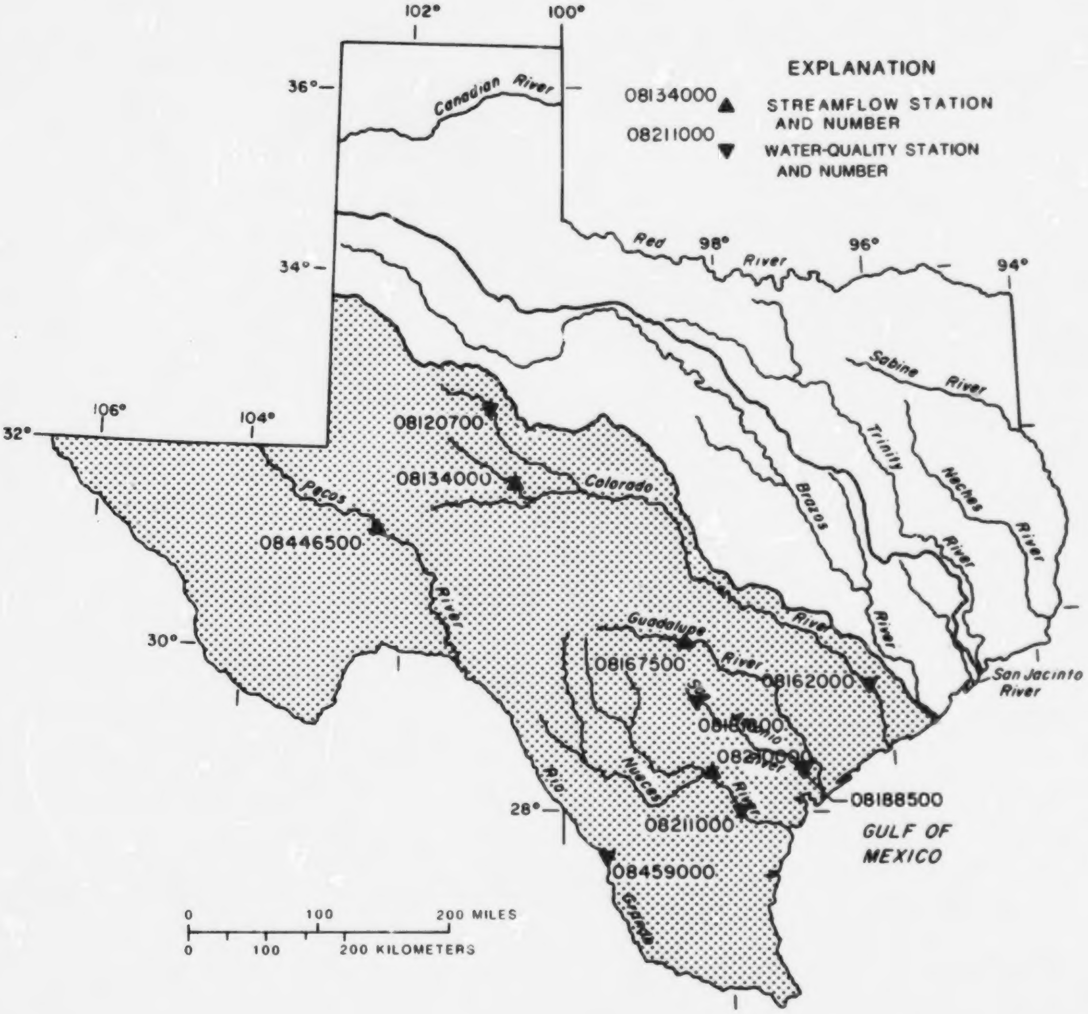
Conservation storage in 71 selected reservoirs throughout the State, with a combined conservation capacity of 31,987,890 acre-feet, increased from 75 percent at the end of September 1985 to 85 percent at the end of September 1986. Records from these 71 reservoirs indicate that contents increased in 62, decreased in 7, and remained the same in 2.

The area for which water-resources data are presented in volume 3 covers the entire southwestern one-half of the State and extends from the western tip of the State near El Paso to the central and lower Texas Gulf Coast. Normal annual precipitation ranges from less than 8 inches in parts of west Texas to more than 40 inches along the middle Texas coast. Average annual runoff ranges form less than 0.1 inch in parts of western Texas to more than 10 inches in some places along the central Gulf Coast. The location of selected streamflow and water-quality stations in the area of Texas covered by volume 3 is shown in figure 1.

Streamflow

Intense rainfall in October produced greater than normal streamflow throughout the area. Runoff rates returned to normal in November and remained in the normal range through May except for a short period of greater than normal runoff, which occurred in the Guadalupe River basin in March. Rainfall was excessive over the entire State in June, producing above normal streamflow in all areas. Streamflow continued to be greater than normal for the remainder of the water year for some parts of West Texas including parts of the Colorado and Guadalupe River basins. For the remainder of the area covered by volume 3, streamflow was near normal for the period July through September.

Streamflow at the hydrologic index station North Concho River near Carlsbad was excessive (within the highest 25 percent of record) during October, January through March, June, August, and September, and near normal the remainder of the year. For the hydrologic index station Guadalupe River near Spring Branch, streamflow was excessive during the year except for the months of March through May and August, when flow rates were normal. A comparison of streamflow for the 1986 water year with streamflow for the period of record at four selected stations for which data are included in volume 3 is presented in the following table: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100°
36°
34°
32°
30°
28°
106°
104°
98°
96°
94°
EXPLANATION
08134000 ▲ STREAMFLOW STATION AND NUMBER
08211000 ▼ WATER-QUALITY STATION AND NUMBER
Canadian River
Red River
Sabine River
Trinity River
Neches River
Brazos River
Colorado River
Pecos River
Guadalupe River
Nueces River
Rio Grande
San Jacinto River
08120700
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08162000
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GULF OF MEXICO
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Figure 1.--Area of Texas covered by volume 3 (shaded) and location of selected streamflow and water-quality stations in volume 3.

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Station no. and name		Discharge during 1986 water year (cubic feet per second)			Discharge during period of record (cubic feet per second)		
		Max.	Min.	Avg.	Max.	Min.	Avg.
08134000	North Concho River near Carlsbad, Tex. 1/	11,500	0	35.7	94,600	0	33.0 (1925-86)
08167500	Guadalupe River near Spring Branch, Tex. 2/	55,500	106	510	160,000	0	314 (1923-86)
08210000	Nueces River near Three Rivers, Tex. 2/	5,770	9.3	448	141,000	0	827 (1916-86)
08446500	Pecos River near Girvin, Tex.	220	15.0	28.2	20,000	1.9	80.3 (1940-86)

1/ National Stream Quality Accounting Network (NASQAN) site.
2/ Hydrologic index station.

Streamflow also was variable at the other two hydrologic index stations in the State. Monthly mean discharges for the four hydrologic index stations in the State are plotted against the median of the long-term monthly mean in figure 2. Streamflow during the 1986 water year at North Concho River near Carlsbad had excessive runoff in October, January through March, June, and August through September, and normal the remainder of the year. Streamflow in the Guadalupe River near Spring Branch was excessive during the year except for the months of March through May and August, when flow rates were normal.

Conservation storage in 19 selected reservoirs in this area (volume 3) of the State, with a total combined conservation capacity of 8,936,380 acre-feet, increased from 53 percent at the end of September 1985 to 66 percent at the end of September 1986. Records from the 19 reservoirs indicate that contents increased in 17 and decreased in 2 during the 1986 water year.

Water Quality

Dissolved-solids concentrations in most streams in the State are inversely related to streamflow. During years when precipitation and runoff are deficient, streamflow commonly is much more mineralized than during years when precipitation and runoff are normal or excessive. However, for streams where discharge is controlled by reservoirs, the mineralization of the water may remain relatively constant despite large fluctuations in precipitation and runoff.

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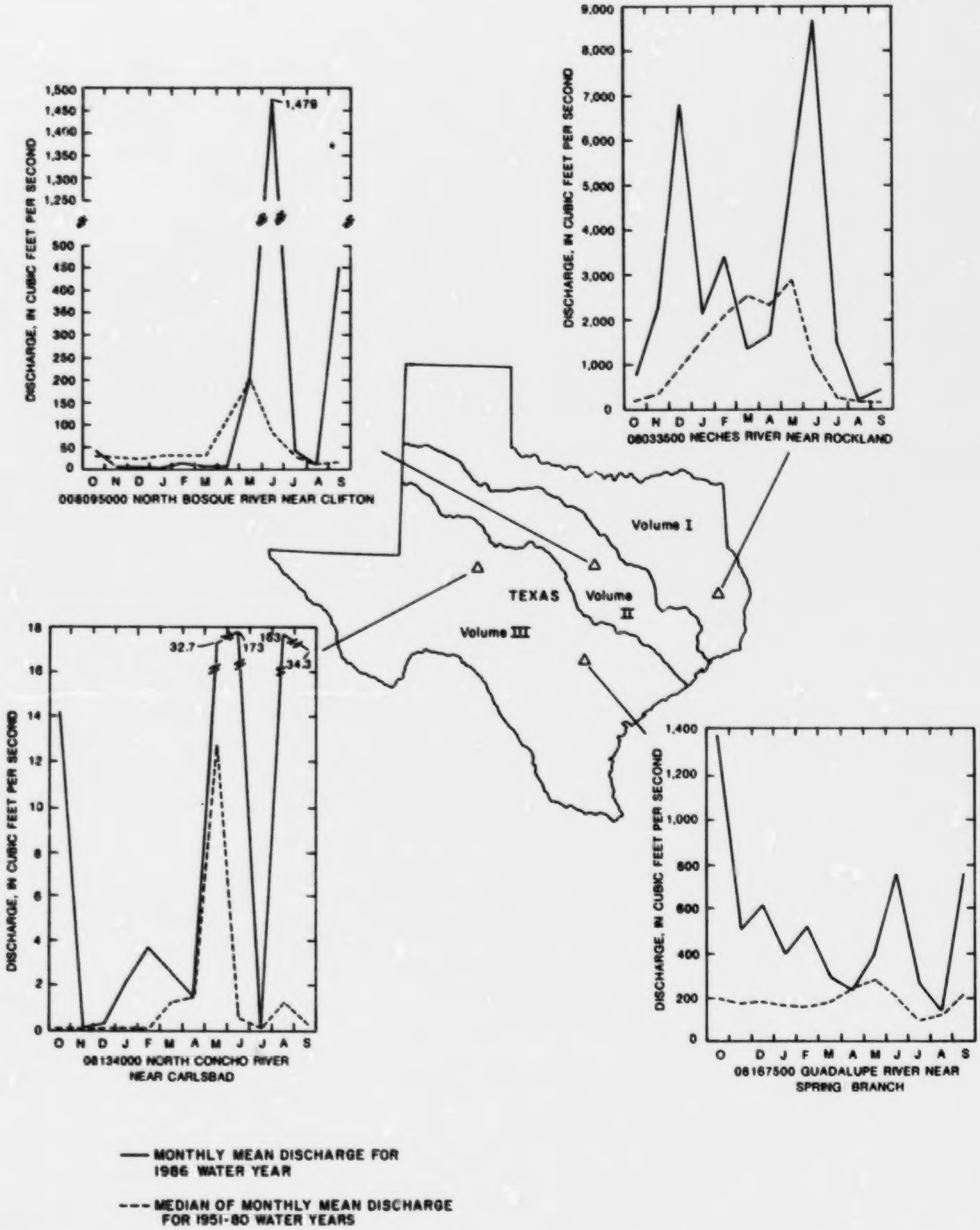

Figure 2.--Comparison of monthly mean discharge at four long-term hydrologic index gaging stations during the 1986 water year with median of the monthly mean discharge for 1951-80 water years.

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Records of discharge-weighted-average concentrations of dissolved solids for the 1986 water year are compared with those for the 1982-86 water years for selected long-term daily or continuous-record stations in the Colorado River, Guadalupe River, Nueces River, and Rio Grande basins in the following table:

Station no. and name		Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
		1986	1982-86	1986	1982-86
Colorado River Basin					
08120700	Colorado River near Cuthbert, Tex.	52	36	750	903
08162000	Colorado River at Wharton, Tex.	2,148	1,791	234	247
Guadalupe River basin					
08181800	San Antonio River near Elmendorf, Tex.	598	421	394	420
08188500	San Antonio River at Goliad, Tex.	741	559	408	474
Nueces River basin					
08211000	Nueces River near Mathis, Tex.	395	308	291	366
Rio Grande basin					
08459000	Rio Grande at Laredo, Tex.	3,778	2,845	609	620

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Radiochemical Program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1986 water year that began October 1, 1985, and ended September 30, 1986. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells and, in Texas, for surface-water stations where only miscellaneous measurements are made.

Downstream Order Numbering

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indention in the "List of Stations" in the front of this report. Each indention represents one rank. This downstream order and system of indention shows which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 08057000, which appears just to the left of the station name, includes the two-digit Part number "08" plus the six-digit downstream-order number "057000." The Part number designates the major river basin; for example, Part "08" is the Western Gulf of Mexico basin.

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations, the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relationship of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as the lapsed time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a remarks statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for those stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error. Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the offices whose addresses are given on the back of the title page of this report to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of the Records

The accuracy of streamflow records depends primarily on: (1) The stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of their true values; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft^3/s; to the nearest tenth between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures for more than 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables is on file in the Texas District. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the offices whose addresses are given on the back of the title page of this report.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications.

A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station where random samples are collected to give better areal coverage to define water-quality conditions in the river basin. A careful distinction needs to be made between "continuing records", as used in this report, and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory.

Procedures for on site measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed under "PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS" which appears at the end of the introductory text. Detailed information on collecting, treating, and shipping samples may be obtained from the Texas Office of the Central Regional Office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the Texas District Office whose address is given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the Texas District Office.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly).

The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratory in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this report:

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

ACCESS TO WATSTORE DATA

The National WATer Data STOrage and REtrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from the District office (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Bacteria are microscopic unicellular organisms, typically spherical, rod-like, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shapped bacteria which ferment lactose with gas formation within 24 hours at 35°C. In the laboratory these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C plus or minus 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5°C plus or minus 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours hours at 35°C plus or minus 1.0°C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square mile (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 105°C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cubic-foot-per-second day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,445 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic foot per second (ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic feet per second per square mile [$(ft^3/s)/mi^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45 µm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_1}{n}$$

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate .+($CaCO_2$).

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of a particle determined by either sieve or sedimentaiton methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation
Silt..........	.004 - .062	Sedimentation
Sand..........	.062 - 2.0	Sedimentation or sieve
Gravel........	2.0 - 64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg C/(m^2.time)] for periphyton and macrophytes and [mg C/(m^3.time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mgO /(m^2.time)] for periphyton and macrophytes and [mgO /(m^3.time)] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

Runoff in inches (IN., in.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry mass or volume, that passes a section during a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water, per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Natural substrate refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is the part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 μm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 μm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata, is the following:

Kingdom..................	Animal
Phylum....................	Arthropoda
Class.....................	Insecta
Order.....................	Ephemeroptera
Family....................	Ephemeridae
Genus.....................	Hexagenia
Species...................	Hexagenia limbata

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table headings and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined all of the constituent in the sample.)

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1986, is called the "1986 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976).

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WSP is used as an abbreviaton for "Water-Supply Paper" in reference to previously published reports.

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett St., Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

1-D1. *Water temperature-influential factors, field measurements, and data presentation,* by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 p.

3-A1. *General field and office procedures for indirect measurements,* by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 p.

3-A2. *Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 p.

3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 p.

3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 p.

3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 p.

3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 p.

3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 p.

3-A8. *Discharge measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 p.

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4-A1. *Some statistical tools in hydrology,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 p.

4-A2. *Frequency curves,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 p.

4-B1. *Low-flow investigations,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 p.

4-B2. *Storage analyses for water supply,* by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 p.

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5-A1. *Methods for determination of inorganic substances in water and fluvial sediments,* by M. W. Skougstad and others: USGS--TWRI Book 5, Chapter A1. 1979. 626 p.

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5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples,* edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 p.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments,* by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 p.

5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments,* by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 p.

5-C1. *Laboratory theory and methods for sediment analysis,* by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 p.

7-C3. *A model for simulation of flow in singular and interconnected channels,* by R. W. Schaffrannek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1983. 110 p.

8-A2. *Installation and service manual for U.S. Geological Survey manometers,* by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 p.

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COLORADO RIVER BASIN

08118000 LAKE J. B. THOMAS NEAR VINCENT, TX

LOCATION.--Lat 32°35'09", long 101°12'18", Borden County, Hydrologic Unit 12080002, at Big Spring pump station on south side of lake, 4.0 mi upstream from dam on Colorado River, 7.3 mi north of Vincent, 12.5 mi west of Ira, and at mile 841.0.

DRAINAGE AREA.--3,389 mi², of which 2,371 mi² probably is noncontributing. Drainage area includes 455 mi² above Bull Creek diversion dam, of which 38 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1953 to September 1986 (discontinued).

REVISED RECORDS.--WRD TX-81-3: Drainage area.

GAGE.--Water-stage recorder and nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929. Nov. 4, 1953, to Feb. 7, 1955, Colorado River Municipal Water District nonrecording gage located 4.0 mi downstream at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam, 14,500 ft long. Storage began in July 1952 and the dam was completed in September 1952. There was no appreciable storage prior to July 1953. The capacity curve is based on surveys made in 1948 and 1950. There are two uncontrolled emergency spillways, both cut through natural ground and located as follows: the first is a 500-foot wide cut located at the left end of dam, and the second cut is 1,600 ft wide located at the right end of dam. These spillways are designed to discharge 161,000 ft³/s (elevation, 2,275.0 ft). An uncontrolled rectangular concrete drop inlet, 38.0 by 53.0 ft at the crest, discharges into two 10.0-foot concrete conduits. In addition, there is an outlet that can release water through a 24-inch gate into a 30-inch concrete pipe. The dam was built by the Colorado River Municipal Water District to impound water for municipal and industrial supply for the cities of Big Spring, Odessa, and Snyder. A diversion dam on Bull Creek diverts water through a 13,000-foot-long gravity canal into Lake J. B. Thomas. These diversions began in November 1953. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	2,280.0	-
Crest of right spillway (south)......................................	2,267.0	283,600
Crest of left spillway (north).......................................	2,264.0	255,000
Crest of drop inlet (top of conservation pool)......................	2,258.0	203,600
Lowest gated outlet (invert)...	2,200.0	1,300

COOPERATION.--Area and capacity curves were furnished by the Colorado River Municipal Water District. Daily elevation record was furnished by the Colorado River Municipal Water District and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 218,600 acre-ft Sept. 8, 1962 (elevation, 2,259.85 ft); minimum since first appreciable storage, 4,960 acre-ft May 28, 1971 (elevation, 2,206.43 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 49,290 acre-ft at 2400 hours Sept. 18 (elevation, 2,228.45 ft); minimum, 21,240 acre-ft May 25 (elevation, 2,217.48 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

2,217.0	20,270	2,225.0	39,190
2,221.0	28,950	2,229.0	50,990

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24510	33170	31360	29960	28490	27150	25400	23190	22100	29580	26730	30160
2	24420	33270	31310	29910	28440	27100	25220	23150	22100	29530	26640	32560
3	24380	33220	31220	29910	28400	27010	25090	23110	22550	29430	26550	33370
4	24290	33120	31170	29870	28300	26870	24980	23020	23190	29360	26370	34550
5	24250	33070	31120	29820	28300	26820	24890	22940	23610	29380	26280	38000
6	24210	33020	31020	29670	28260	26820	24780	22850	25130	29290	26200	47650
7	24120	32970	30970	29620	28260	26730	24910	22770	26460	29190	26110	48630
8	24080	32920	30930	29580	28210	26640	24860	22680	26820	29090	26060	48820
9	24040	32870	30880	29580	28210	26600	24820	22600	28030	29000	26150	48880
10	24510	32820	30830	29530	28160	26550	24780	22510	29480	28900	26110	48910
11	24510	32820	30780	29430	28120	26510	24730	22430	29770	28810	26060	48880
12	25040	32820	30730	29430	28070	26460	24690	22340	29770	28720	25970	48880
13	25170	32670	30690	29380	28030	26370	24640	22260	29670	28630	25890	48850
14	25260	32620	30640	29340	27980	26330	24600	22220	29620	28530	25800	48820
15	25260	32560	30640	29290	27930	26280	24550	22140	29530	28400	25750	48910
16	25220	32560	30590	29240	27890	26240	24510	22060	29430	28300	25690	49010
17	25220	32460	30540	29190	27840	26200	24460	21980	29380	28210	25640	49220
18	25840	32460	30490	29140	27800	26150	24080	21850	29290	28030	25750	49290
19	29430	32310	30490	29090	27750	26020	24120	21770	29290	27930	25660	49250
20	32310	32110	30440	29050	27700	25970	24040	21690	29380	27890	25530	49190
21	32820	32010	30400	29000	27610	25930	23910	21610	29340	27750	25310	49130
22	33020	31960	30350	28950	27560	25890	23870	21490	29480	27610	25310	49070
23	33020	31910	30300	28900	27520	25800	23830	21410	29530	27520	25220	49040
24	33070	31810	30250	28900	27470	25710	23780	21290	29530	27520	25090	48940
25	33070	31760	30250	28860	27430	25620	23740	21240	29770	27380	25040	48880
26	33520	31610	30200	28810	27330	25530	23660	21450	29910	27290	25310	48760
27	33470	31560	30200	28720	27290	25890	23610	21690	29820	27190	25260	48700
28	33520	31510	30160	28670	27190	25840	23490	21690	29820	27100	25310	48630
29	33470	31460	30110	28630	---	25750	23360	21650	29670	27060	26150	48540
30	33420	31410	30060	28580	---	25660	23280	22100	29620	26920	27100	48600
31	33320	---	30010	28530	---	25490	---	22100	---	26820	27800	---
MAX	33520	33270	31360	29960	28490	27150	25400	23190	29910	29580	27800	49290
MIN	24040	31410	30010	28530	27190	25490	23280	21240	22100	26820	25040	30160
(†)	2222.78	2222.02	2221.44	2220.82	2220.24	2219.48	2218.46	2217.90	2221.28	2220.08	2220.50	2228.73
(ϕ)	+8720	-1910	-1400	-1480	-1340	-1700	-2210	-1180	+7520	-2800	+980	+20800

CAL YR 1985 MAX 33520 MIN 17680 (ϕ) +9330
WTR YR 1986 MAX 49290 MIN 21240 (ϕ) +24000

(†) Gage height, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

NOTE.--Gage heights and contents reported at 2400 hours Sept. 6-30.

BEST COPY AVAILABLE

08119500 COLORADO RIVER NEAR IRA, TX

LOCATION.--Lat 32°32'18", long 101°03'12", Scurry County, Hydrologic Unit 12080002, on right bank 530 ft downstream from bridge on State Highway 350, 3.8 mi downstream from Bluff Creek, 4 mi upstream from Willow Creek, 4.5 mi southwest of Ira, and at mile 826.3.

DRAINAGE AREA.--3,483 mi², of which 2,371 mi² (corrected) probably is noncontributing.

PERIOD OF RECORD.--October 1947 to September 1952 (monthly records only 1950-52), October 1958 to current year.
Water-quality records: Chemical analyses: November 1958 to September 1970, November 1974 to September 1982.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,134.15 ft above National Geodetic Vertical Datum of 1929. Oct. 1-30, 1947, nonrecording gage at site 75 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Since July 1952, flow has largely been regulated by Lake J. B. Thomas (station 08118000) 11 mi upstream.

AVERAGE DISCHARGE.--5 years (water years 1948-52) prior to completion of Colorado River Dam, 50.5 ft³/s (36,590 acre-ft/yr); 28 years (water years 1959-86) regulated, 9.67 ft³/s (7,010 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,500 ft³/s July 6, 1948 (gage height, 21.35 ft), from rating curve extended above 9,600 ft³/s by slope-conveyance method; maximum gage height, 22.84 ft May 15, 1980 (from shift in rating); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 16, 1913 (gage height, 32 ft), was the greatest since at least that date, from information by local resident. Flood in May 1947 reached a stage of 25.1 ft, from floodmark at site of former bridge 269 ft upstream from gage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 958 ft³/s June 5 at 1615 hours (gage height, 10.88 ft); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	.23	.41	.54	.45	.31	.21	.17	2.7	.47	.00	150
2	.12	.25	.31	.54	.50	.31	.21	.15	165	.46	.00	39
3	.09	.23	.31	.48	.54	.31	.20	.15	143	4.7	.00	143
4	.07	.22	.33	.51	.51	.29	.18	.16	13	19	.00	175
5	.06	.22	.31	.43	.62	.31	.18	.18	551	4.9	.00	137
6	.03	.22	.31	.42	.61	.26	1.0	.18	255	1.3	.00	116
7	.03	.22	.34	.46	.60	.28	.99	.18	254	.68	.00	31
8	.03	.22	.38	.37	.48	.31	.54	.18	28	.42	.00	12
9	.03	.22	.42	.40	.54	.29	.31	.18	11	.30	.00	5.5
10	2.6	.22	.48	.44	.52	.31	.24	.18	6.4	.23	.00	3.3
11	.15	.22	.43	.42	.51	.30	.20	.18	4.0	.16	.00	2.3
12	.12	.23	.48	.46	.54	.31	.15	1.8	2.7	.19	.00	1.9
13	.15	.26	.53	.48	.52	.35	.13	.55	2.0	.19	.00	1.7
14	.15	.34	.57	.48	.48	.72	.09	.26	1.7	.18	.00	2.3
15	.15	.36	.53	.48	.48	.86	.07	.25	1.6	.12	2.1	1.7
16	.15	.36	.48	.48	.48	.62	.07	.26	1.5	.07	.11	1.5
17	44	.36	.48	.48	.46	.48	.07	.26	1.9	.05	.00	1.4
18	85	.31	.48	.55	.43	.38	.07	.26	6.4	.02	.00	1.4
19	13	.30	.50	.54	.44	.31	.07	.22	2.3	.00	.00	1.3
20	2.4	.26	.48	.54	.40	.31	.07	.24	1.5	.00	.00	1.2
21	.96	.26	.48	.54	.36	.31	.07	.26	1.2	.00	.00	1.2
22	.59	.26	.48	.48	.36	.33	.08	.26	1.2	.00	.00	1.2
23	.44	.26	.48	.48	.35	.42	.09	.26	1.0	.00	.00	1.2
24	.35	.26	.45	.48	.34	.38	1.1	27	.84	.00	.00	1.2
25	.31	.29	.42	.48	.35	.35	.69	10	.76	.00	64	1.1
26	.31	.35	.42	.46	.34	.36	.72	32	.66	.00	35	1.0
27	.31	.36	.42	.45	.35	.31	.29	6.9	.60	.00	2.3	1.0
28	.26	.36	.42	.47	.32	.31	.18	1.4	.51	.00	16	1.0
29	.25	.36	.42	.49	---	.28	.15	18	.47	.00	11	1.0
30	.23	.39	.43	.42	---	.25	.31	123	.41	.00	4.0	2.0
31	.22	---	.52	.42	---	.23	---	12	---	.00	6.9	---
TOTAL	152.74	8.40	13.50	14.67	12.88	11.15	8.73	237.07	1462.35	33.44	141.41	840.4
MEAN	4.93	.28	.44	.47	.46	.36	.29	7.65	48.7	1.08	4.56	28.0
MAX	85	.39	.57	.55	.62	.86	1.1	123	551	19	64	175
MIN	.03	.22	.31	.37	.32	.23	.07	.15	.41	.00	.00	1.0
AC-FT	303	17	27	29	26	22	17	470	2900	66	280	1670

CAL YR 1985 TOTAL 2793.83 MEAN 7.65 MAX 776 MIN .00 AC-FT 5540
WTR YR 1986 TOTAL 2936.74 MEAN 8.05 MAX 551 MIN .00 AC-FT 5830

08120500 DEEP CREEK NEAR DUNN, TX

LOCATION.--Lat 32°34'25", long 100°54'27", Scurry County, Hydrologic Unit 12080002, at center of downstream side of bridge on Farm Road 1606, 1.5 mi northwest of Dunn, 2.7 mi upstream from Sulphur Draw, and 9.6 mi upstream from mouth.

DRAINAGE AREA.--198 mi^2, of which 10 mi^2 probably is noncontributing.

PERIOD OF RECORD.--April 1953 to September 1986 (discontinued).

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,172.17 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 21, 1955, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good.

AVERAGE DISCHARGE.--33 years (water years 1954-86), 11.9 ft^3/s (0.86 in/yr), 8,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,700 ft^3/s Aug. 14, 1972 (gage height, 31.28 ft, from floodmarks), from rating curve extended above 12,000 ft^3/s by velocity-area study; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1881, 36,400 ft^3/s June 19, 1939, by slope-area measurement at site 8.0 mi upstream from gage. Flood in 1892 reached about same stage as that of June 19, 1939, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sept. 3	1700	*1,170	*11.84	No other peak greater than base discharge.			

Minimum daily discharge, 0.02 ft^3/s May 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	2.7	2.5	1.6	2.5	2.4	.96	2.1	2.7	1.4	1.1	61
2	2.2	3.0	2.2	1.7	2.5	2.1	1.5	2.5	89	21	1.1	3.5
3	1.9	3.0	2.3	1.9	2.5	2.1	2.9	2.4	193	18	.93	375
4	1.7	2.6	2.9	2.2	2.9	1.7	1.8	2.6	9.3	140	.80	247
5	1.3	2.5	2.7	1.7	3.6	2.2	8.6	2.1	267	18	.80	187
6	1.3	2.7	2.4	1.9	3.1	2.2	3.5	2.1	85	5.7	.74	36
7	1.7	2.5	2.4	1.9	2.7	2.1	3.4	1.9	224	3.4	.42	12
8	2.0	2.5	2.4	1.6	2.4	1.5	2.4	8.4	20	2.5	.27	8.7
9	2.3	2.2	2.5	1.9	2.2	1.5	2.2	2.6	7.0	2.1	.95	6.9
10	12	2.4	2.7	2.5	2.3	1.5	2.2	4.7	4.4	2.0	.97	5.7
11	4.9	2.3	2.5	2.8	2.1	1.6	1.8	2.1	3.3	1.8	.84	5.5
12	6.4	2.7	2.4	2.6	2.0	1.6	2.1	1.4	3.0	1.4	.74	4.6
13	4.1	3.3	2.8	2.4	2.0	1.7	1.9	1.0	3.2	1.3	1.0	4.3
14	2.6	3.7	2.6	2.5	2.2	2.5	1.8	.80	3.2	1.3	.76	5.5
15	2.5	4.6	2.8	2.6	1.9	2.8	1.2	.70	2.9	1.5	.82	4.7
16	2.8	4.3	2.6	2.5	2.2	2.1	1.4	.34	4.9	1.4	4.4	4.0
17	34	4.7	2.7	2.5	2.3	1.8	1.0	.09	207	1.3	1.7	3.6
18	414	4.2	2.7	2.7	2.2	1.9	.85	.06	13	1.0	.98	3.3
19	144	3.5	2.6	2.6	2.2	1.8	15	.06	50	.61	.75	3.8
20	19	3.1	2.7	2.7	1.9	1.8	4.4	.04	8.2	1.0	.42	3.7
21	7.3	3.3	2.6	2.5	1.3	2.0	2.1	.03	4.2	1.2	.33	3.8
22	5.1	3.5	2.6	2.1	.91	2.1	1.7	.02	3.3	1.1	.17	3.3
23	4.4	3.5	2.4	1.7	1.2	2.1	1.7	.02	2.8	.99	.08	3.3
24	3.7	3.5	2.1	1.9	2.1	2.2	1.8	.03	3.0	.84	.34	3.4
25	3.2	3.2	2.1	2.3	1.9	1.9	1.9	.04	2.7	1.1	53	3.3
26	3.2	3.4	2.3	2.4	1.5	2.7	2.5	.12	2.4	1.2	15	3.4
27	3.2	3.0	2.3	2.5	1.6	3.1	2.7	3.1	2.1	1.3	3.5	3.7
28	3.0	2.7	2.1	2.6	1.8	2.1	2.0	1.7	2.0	1.2	14	3.4
29	3.0	3.0	2.3	2.2	---	2.2	1.9	2.5	1.9	.95	13	3.5
30	2.4	3.0	2.3	2.1	---	1.6	2.5	76	1.5	.63	3.9	3.5
31	2.6	---	1.8	2.3	---	1.2	---	6.9	---	.88	2.8	---
TOTAL	704.3	94.6	76.3	69.4	60.01	62.1	81.71	128.45	1226.0	238.10	126.61	1020.4
MEAN	22.7	3.15	2.46	2.24	2.14	2.00	2.72	4.14	40.9	7.68	4.08	34.0
MAX	414	4.7	2.9	2.8	3.6	3.1	15	76	267	140	53	375
MIN	1.3	2.2	1.8	1.6	.91	1.2	.85	.02	1.5	.61	.08	3.3
CFSM	.12	.02	.01	.01	.01	.01	.01	.02	.22	.04	.02	.18
IN.	.14	.02	.02	.01	.01	.01	.02	.03	.24	.05	.03	.20
AC-FT	1400	188	151	138	119	123	162	255	2430	472	251	2020

CAL YR 1985 TOTAL 5448.23 MEAN 14.9 MAX 1040 MIN .00 CFSM .08 IN. 1.08 AC-FT 10810
WTR YR 1986 TOTAL 3887.98 MEAN 10.7 MAX 414 MIN .02 CFSM .06 IN. .77 AC-FT 7710

08120700 COLORADO RIVER NEAR CUTHBERT, TX

LOCATION.--Lat 32°28'38", long 100°56'58", Mitchell County, Hydrologic Unit 12080002, on left bank at downstream side of bridge on Farm Road 1808, 4.0 mi downstream from Deep Creek, 4.8 mi east of Cuthbert, 8.0 mi northwest of Colorado City, and at mile 810.0.

DRAINAGE AREA.--3,912 mi², of which 2,381 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1965 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,073.49 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 20-28. Records good. Flow is partly regulated by Lake J.B. Thomas (station 08118000) 27 mi upstream.

AVERAGE DISCHARGE.--21 years (water years 1966-86), 36.5 ft³/s (26,440 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s Aug. 14, 1972 (gage height, 25.99 ft); maximum gage height, 27.18 ft Sept. 29, 1980; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1941 and 1946 reached a stage of 36.1 ft, from State Department of Highways and Public Transportation bridge plans.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,190 ft³/s Sept. 4 at 0130 hours (gage height, 14.89 ft); no flow Aug. 10-14, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBEP 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	4.8	5.7	5.9	6.0	4.3	3.3	2.7	67	4.5	.18	170
2	6.6	5.0	5.6	5.7	6.1	4.9	3.0	2.6	94	42	.07	1420
3	5.4	5.1	5.3	5.7	6.7	5.2	2.9	1.9	788	65	.03	1320
4	4.6	5.2	5.2	5.7	7.1	5.0	3.7	1.8	353	225	.10	1580
5	3.8	4.9	5.2	5.8	8.4	5.0	3.5	1.8	1020	83	.21	1150
6	3.3	4.5	5.5	6.0	9.4	5.0	7.7	1.8	1170	26	.13	936
7	2.5	4.5	5.5	6.0	8.6	5.0	7.0	1.4	944	15	.07	700
8	2.3	4.5	5.5	5.6	7.5	5.0	6.2	1.2	427	10	.04	250
9	2.9	4.7	5.7	5.4	6.9	4.9	5.4	7.6	71	7.2	.01	99
10	27	4.7	5.9	5.4	6.6	4.6	5.0	3.6	127	5.9	.00	62
11	24	4.5	5.7	5.5	6.5	4.4	4.8	5.0	79	5.3	.00	44
12	11	4.7	5.8	5.7	6.2	4.2	4.0	3.1	33	4.7	.00	32
13	11	4.7	6.4	5.6	6.0	4.2	3.7	5.4	20	3.8	.00	26
14	7.2	5.4	6.6	5.5	6.1	4.2	3.4	1.5	15	3.1	.00	22
15	6.4	5.7	6.6	5.5	6.3	4.8	3.0	1.3	11	2.6	.04	26
16	5.2	6.0	6.6	5.7	6.2	5.6	2.6	.82	23	2.4	.38	19
17	118	6.1	6.6	5.7	6.0	5.6	2.3	.49	469	2.3	3.6	15
18	510	6.3	6.6	5.8	6.0	5.0	2.1	.34	105	1.9	1.7	21
19	358	6.1	6.5	6.0	5.8	4.6	2.9	.24	116	1.9	.68	14
20	59	5.3	6.1	6.1	5.6	4.5	18	.18	57	1.6	.26	12
21	28	5.0	5.8	6.0	5.3	4.5	6.2	.10	25	1.2	.10	11
22	19	5.0	5.7	5.8	4.9	4.2	4.0	.05	18	1.4	.05	10
23	14	5.0	5.7	6.0	4.5	4.2	3.1	.02	17	1.6	.01	8.6
24	10	5.0	5.7	6.0	4.5	4.2	2.4	.02	14	1.3	.00	8.0
25	7.5	5.1	5.6	5.9	4.8	4.0	12	30	12	.85	41	7.6
26	6.6	5.4	5.5	5.7	5.2	3.9	23	40	9.4	.59	567	6.9
27	6.0	5.7	5.5	6.0	4.9	4.1	15	35	8.4	.59	497	6.7
28	5.7	5.7	5.5	6.2	4.5	4.8	6.7	12	6.8	.55	88	6.9
29	5.3	5.7	5.5	6.7	---	4.1	4.3	7.6	5.9	.52	80	6.7
30	5.0	5.7	5.6	6.6	---	3.8	3.2	228	5.3	.38	45	6.6
31	4.9	---	6.0	6.2	---	3.7	---	186	---	.27	36	---
TOTAL	1290.2	156.0	180.7	181.4	172.6	141.5	174.4	583.56	6110.8	522.45	1361.66	7997.0
MEAN	41.6	5.20	5.83	5.85	6.16	4.56	5.81	18.8	204	16.9	43.9	267
MAX	510	6.3	6.6	6.7	9.4	5.6	23	228	1170	225	567	1580
MIN	2.3	4.5	5.2	5.4	4.5	3.7	2.1	.02	5.3	.27	.00	6.6
AC-FT	2560	309	358	360	342	281	346	1160	12120	1040	2700	15860

CAL YR 1985 TOTAL 13228.24 MEAN 36.2 MAX 1520 MIN .00 AC-FT 26240
WTR YR 1986 TOTAL 18872.27 MEAN 51.7 MAX 1580 MIN .00 AC-FT 37430

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1965 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1965 to current year.
WATER TEMPERATURES: March 1965 to May 1980, April 1983 to current year.

INSTRUMENTATION.--Since March 1965, specific conductance is recorded continuously at this station. Since April 1983, water temperature is recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 70,000 microsiemens Nov. 17, 1968; minimum daily, 102 microsiemens Sept. 28, 1980.
WATER TEMPERATURES: Maximum daily, 36.0°C Aug. 7, 1985; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 7,000 microsiemens May 25; minimum daily, 200 microsiemens Sept. 2, 3.
WATER TEMPERATURES: Maximum daily, 33.0°C Oct. 11, Aug. 19; minimum daily, 0.0°C Dec. 14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 29...	1600	5.2	3250	20.0	560	380	140	51	520
DEC 10...	1530	5.8	4550	7.5	850	550	210	80	690
JAN 22...	1420	5.8	4650	9.5	880	610	200	92	700
APR 15...	1340	3.2	5270	21.0	960	700	220	100	810
JUN 03...	1635	841	644	22.0	100	44	30	6.3	81
JUL 22...	1515	1.5	3900	27.0	690	490	170	65	560

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 29...	10	7.3	179	330	820	0.4	6.8	2000
DEC 10...	11	8.2	308	650	1100	0.9	8.1	2900
JAN 22...	11	7.6	272	750	1000	1.1	3.2	2900
APR 15...	12	9.2	264	830	1200	1.1	5.7	3300
JUN 03...	4	4.4	57	54	120	0.3	4.9	340
JUL 22...	10	7.9	198	430	920	0.6	6.8	2300

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	1290.2	1330	835	2910	280	975	210	739	270
NOV. 1985	156.0	3470	2170	912	770	326	520	218	650
DEC. 1985	180.7	4580	2850	1390	1100	515	660	321	830
JAN. 1986	181.4	4680	2910	1430	1100	530	670	328	850
FEB. 1986	172.6	4730	2950	1370	1100	511	680	315	860
MAR. 1986	141.5	4590	2860	1090	1100	405	660	252	830
APR. 1986	174.4	4270	2660	1250	980	461	620	290	780
MAY 1986	583.56	2040	1280	2010	440	694	320	497	400
JUNE 1986	6110.8	1160	729	12000	250	4050	180	3050	230
JULY 1986	522.45	2030	1270	1790	440	619	310	441	390
AUG. 1986	1361.66	1290	808	2970	270	993	210	758	260
SEPT 1986	7997.0	671	420	9070	140	3060	110	2290	130
TOTAL	18872.27	**	**	38200	**	13100	**	9500	**
WTD.AVG.	52	1200	750	**	260	**	190	**	230

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1100	900	1020	3100	3000	3040	4400	4300	4380	4700	4600	4670
2	1300	1100	1180	3100	3000	3060	4500	4400	4480	4700	4600	4670
3	1500	1300	1380	3100	2900	2990	4500	4400	4470	4900	4700	4790
4	1600	1500	1550	3100	2900	3000	4500	4400	4430	4900	4700	4790
5	1700	1500	1630	2900	2800	2850	4600	4400	4530	4800	4700	4710
6	1900	1600	1740	3000	2800	2950	4600	4400	4520	4800	4400	4630
7	2100	1800	1930	3100	3000	3050	4400	4300	4380	4800	4400	4550
8	2400	2000	2170	3100	3000	3080	4600	4400	4510	4800	4700	4750
9	2500	2300	2390	3100	2900	3000	4600	4400	4520	4700	4500	4600
10	2900	1700	2150	3100	3000	3050	4600	4400	4500	4700	4500	4600
11	3600	2500	2910	3300	3000	3170	4600	4500	4560	4800	4600	4700
12	2600	2400	2490	3300	3200	3270	4600	4300	4450	4700	4500	4650
13	2400	1900	2260	3300	3100	3200	4500	4300	4410	4600	4400	4500
14	1900	1500	1630	3400	3100	3260	4700	4400	4600	4700	4500	4590
15	1800	1600	1700	3400	3300	3370	4700	4500	4610	4700	4600	4630
16	1900	1700	1820	3600	3300	3480	4800	4500	4650	4800	4600	4690
17	2000	700	1350	3500	3100	3230	4800	4600	4690	4700	4600	4630
18	1700	700	1050	3400	3200	3350	4800	4600	4700	4700	4600	4620
19	1300	800	950	3500	3200	3360	4800	4700	4710	4700	4600	4670
20	1700	1300	1480	3700	3500	3650	4700	4600	4630	4700	4500	4670
21	2300	1700	2000	3800	3700	3780	4800	4600	4730	4800	4500	4660
22	3000	2300	2680	3900	3700	3770	4800	4600	4730	4800	4400	4680
23	3300	3000	3150	4000	3800	3870	4800	4500	4690	4800	4600	4680
24	3500	3300	3420	4000	3900	3910	4800	4500	4670	4700	4600	4630
25	3500	3400	3470	4000	3900	3980	4700	4500	4650	4900	4700	4870
26	3600	3400	3490	4100	4000	4050	4700	4500	4660	5000	4800	4910
27	3500	3400	3480	4200	4100	4130	4700	4500	4610	4900	4700	4750
28	3500	3300	3400	4200	4100	4150	4700	4500	4600	4800	4700	4730
29	3400	3100	3280	4200	4100	4170	4700	4600	4640	4800	4700	4750
30	3200	3100	3190	4400	4200	4330	4700	4500	4600	4800	4600	4720
31	3200	3000	3130	---	---	---	4700	4500	4580	4700	4500	4600
MONTH	3600	700	2240	4400	2800	3450	4800	4300	4580	5000	4400	4680

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4800	4600	4730	4700	4500	4620	4400	4200	4300	4800	4600	4690
2	4800	4600	4680	4600	4500	4550	4600	4400	4460	4600	4400	4470
3	4700	4500	4590	4500	4200	4400	4800	4600	4680	4400	4200	4310
4	4600	4500	4570	4400	4100	4220	4800	4600	4700	4300	4100	4210
5	4700	4500	4580	4300	4200	4250	4700	4200	4540	4200	4100	4150
6	4600	4200	4350	4500	4200	4300	4300	4000	4160	4200	4000	4120
7	4600	4400	4480	4500	4300	4450	4000	2700	3050	4300	4100	4160
8	4700	4500	4570	4400	4100	4210	5100	4300	4830	4200	4000	4130
9	4700	4500	4580	4400	4200	4290	4800	4300	4580	4000	3000	3550
10	4800	4600	4700	4500	4300	4390	4700	4000	4300	3000	2300	2440
11	4800	4600	4720	4700	4400	4630	4000	3700	3830	2500	2300	2420
12	4700	4600	4700	4700	4500	4610	4600	4100	4280	2600	2400	2550
13	4800	4600	4690	4700	4500	4590	5300	4700	5050	4600	2400	2750
14	4800	4600	4720	4700	4500	4620	5300	4800	5130	2500	2200	2350
15	4800	4700	4780	4700	4500	4620	5400	4600	5010	2300	2100	2180
16	4800	4700	4740	4700	4100	4490	5400	5200	5300	2700	2200	2390
17	5000	4700	4920	5200	4100	4540	5200	5000	5120	3500	2700	3200
18	4900	4800	4880	5300	5100	5210	5000	4800	4900	4500	3600	3980
19	5000	4800	4900	5200	5000	5110	5000	4800	4900	5000	4400	4670
20	4900	4600	4850	5300	5100	5180	4800	2600	3170	5300	4800	5070
21	4900	4800	4840	5500	5200	5360	3000	2800	2860	5400	5300	5330
22	5000	4800	4910	5400	5200	5330	3200	2900	3060	5500	5200	5400
23	5000	4900	4930	5300	5100	5150	3400	3100	3260	5600	5300	5470
24	5400	5000	5200	5000	4800	4880	3500	3200	3360	5700	5400	5560
25	5400	5200	5320	4800	4700	4740	4200	2700	3450	7000	400	4180
26	5300	4700	5050	4700	4400	4520	5500	3100	4690	4600	2500	3420
27	4700	4600	4690	4500	4300	4460	5700	4700	5190	4400	2300	3440
28	4900	4600	4710	4500	4100	4350	5300	4700	4980	2700	2100	2330
29	---	---	---	4100	3800	3950	5200	5000	5140	2100	1400	1950
30	---	---	---	4400	4100	4230	5100	4800	4880	1900	400	1340
31	---	---	---	4400	4300	4350	---	---	---	2000	1200	1660
MONTH	5400	4200	4760	5500	3800	4600	5700	2600	4370	7000	400	3610

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1600	800	1030	4700	4600	4630	4500	4200	4320	3300	500	1950
2	1200	700	917	6100	2600	4260	4500	4300	4420	700	200	308
3	1100	300	662	2500	800	2060	4500	4300	4450	700	200	383
4	1700	900	1190	1300	800	1100	4700	4400	4540	500	300	408
5	1900	600	946	3000	1100	1940	5100	4600	4900	500	300	413
6	800	600	696	3200	2500	2980	5300	5000	5180	700	400	550
7	1000	700	838	3000	2700	2770	5300	5100	5190	600	400	504
8	2400	700	1330	2800	2600	2720	5200	5000	5130	1700	600	1120
9	3900	2600	3340	3000	2700	2900	5300	5100	5210	2700	1800	2290
10	4800	900	2100	3100	2900	3020	---	---	---	3500	2700	3190
11	2800	1300	1980	3100	2900	3030	---	---	---	4000	3500	3780
12	3900	2800	3340	3100	3000	3030	---	---	---	4400	4000	4160
13	4700	3900	4330	3200	3000	3120	---	---	---	4600	4300	4480
14	5200	4700	4950	3400	3100	3210	---	---	---	4800	4600	4680
15	5500	5100	5330	3400	3300	3380	5700	5500	5580	5100	4600	4800
16	5500	1100	4850	3600	3400	3500	6300	5500	5950	5000	4600	4880
17	3200	1000	1540	3700	3500	3550	6100	3600	4750	4700	4200	4410
18	2200	700	1440	3700	3400	3550	3500	2400	2940	6100	4600	5450
19	3100	1100	1610	3600	3400	3510	2300	1900	2090	5300	3700	4790
20	3700	1300	2320	3700	3400	3550	1900	1700	1820	3800	3500	3630
21	4800	3800	4410	3700	3500	3650	1800	1700	1740	4200	3800	4030
22	5000	4700	4890	3800	3600	3710	1800	1700	1760	4600	4200	4380
23	5600	4500	4770	3900	3700	3800	1900	1700	1780	5000	4500	4800
24	6300	5600	5900	3900	3700	3830	---	---	---	5100	4900	5000
25	6100	5100	5700	4100	3900	3980	3100	800	1800	5000	4900	4940
26	4900	4000	4280	4100	3900	4040	1200	300	821	5100	4900	4980
27	4300	3900	4070	4000	3900	4000	2000	300	1340	5000	4900	4980
28	4600	4100	4350	4000	3800	3930	2600	1400	2200	5000	4700	4870
29	4700	4500	4590	4100	3800	3990	2400	1200	1710	4900	4700	4780
30	4700	4500	4610	4200	4000	4120	2600	1300	1980	4900	4700	4820
31	---	---	---	4300	4100	4200	3300	2600	2810	---	---	---
MONTH	6300	300	3080	6100	800	3390	6300	300	3380	6100	200	3460

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.0	15.0	16.5	23.0	18.5	20.0	19.5	14.5	16.5	8.0	5.0	6.5
2	18.0	15.5	16.5	20.0	16.5	18.5	14.0	9.5	11.0	7.5	3.5	5.5
3	21.0	15.0	18.0	21.5	15.5	19.0	13.5	9.0	11.0	6.5	2.0	4.5
4	20.5	16.5	18.5	22.0	16.5	19.5	---	---	---	6.5	3.5	5.0
5	19.5	15.0	17.0	22.5	17.0	20.0	---	---	---	5.5	1.5	3.5
6	21.0	15.5	17.5	22.0	19.0	20.5	---	---	---	6.0	2.0	3.0
7	23.5	17.0	19.5	21.5	17.0	19.5	---	---	---	---	---	---
8	25.0	20.0	22.0	24.5	17.5	21.0	---	---	---	9.5	6.0	8.0
9	32.0	23.5	26.5	26.0	21.5	24.5	---	---	---	7.0	2.0	5.0
10	---	---	32.0	24.5	20.0	22.5	---	---	---	9.0	1.0	5.5
11	33.0	28.5	30.5	20.0	17.5	18.0	6.5	4.0	5.0	8.5	3.0	6.0
12	---	---	32.0	23.5	17.5	19.5	4.0	2.5	3.0	14.5	4.5	9.5
13	---	---	31.0	26.0	23.0	24.5	3.5	1.0	2.0	13.0	5.5	9.0
14	32.0	24.5	27.5	28.0	24.5	26.0	4.0	.0	2.0	10.0	4.5	7.5
15	27.5	22.5	25.0	24.0	20.5	21.5	4.5	1.0	3.0	13.0	6.5	9.5
16	26.5	22.5	24.5	20.5	17.0	19.0	4.5	1.5	3.0	12.5	9.5	11.0
17	25.5	22.0	23.5	23.0	17.5	20.5	5.5	1.5	3.5	13.0	7.5	10.5
18	23.0	21.5	22.0	25.5	22.0	23.5	4.0	2.0	3.0	13.0	8.0	10.5
19	22.5	20.5	21.5	23.5	19.0	22.0	5.0	.5	3.0	12.5	7.0	10.0
20	24.5	22.5	23.5	18.5	15.0	17.0	5.5	1.5	4.0	12.5	7.0	10.0
21	23.5	22.0	22.5	18.0	16.0	17.0	6.5	2.0	4.5	13.5	8.0	10.5
22	26.0	22.0	23.5	19.0	14.5	17.0	8.0	3.0	5.5	12.0	7.5	9.5
23	27.0	23.0	25.0	20.5	16.0	18.5	7.5	3.5	6.0	9.5	5.0	7.5
24	26.5	21.5	24.0	19.5	17.0	18.5	7.0	4.0	5.5	11.0	7.0	9.0
25	24.5	23.0	23.5	23.0	17.5	20.0	5.5	2.0	4.0	10.0	6.0	8.0
26	25.0	22.5	23.5	24.0	21.0	22.5	6.0	1.5	4.0	8.5	4.5	6.5
27	25.5	21.5	23.5	22.0	18.5	19.5	6.0	2.0	4.0	8.0	3.5	6.0
28	25.0	21.5	23.0	18.5	17.5	18.0	7.0	3.0	5.0	10.0	4.0	7.0
29	27.5	20.0	23.5	21.0	16.5	18.5	6.0	3.0	4.5	10.0	6.0	8.0
30	26.5	22.5	24.5	22.5	19.5	21.0	7.5	2.5	5.0	10.5	5.5	8.0
31	24.5	19.5	22.5	---	---	---	7.0	4.0	6.0	14.5	8.0	11.5
MONTH	33.0	15.0	23.5	28.0	14.5	20.0	19.5	.0	5.0	14.5	1.0	7.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16.5	12.0	14.0	16.0	9.5	13.0	22.5	18.5	20.5	26.0	20.5	23.0
2	15.0	14.0	14.5	17.0	11.0	14.0	22.0	18.0	20.0	27.0	21.0	24.0
3	16.0	13.5	14.5	15.5	12.5	14.0	22.5	17.5	20.0	27.0	21.0	24.0
4	14.5	10.0	12.5	16.5	10.0	13.5	22.0	15.0	18.5	26.0	21.5	23.5
5	13.5	11.0	12.0	16.5	10.5	14.0	23.5	16.0	20.0	28.0	22.0	24.5
6	13.0	9.0	11.0	16.5	10.5	14.0	25.0	20.0	22.5	28.5	22.5	25.0
7	12.0	9.0	10.5	17.0	12.0	14.5	25.5	21.0	23.5	28.5	23.5	25.5
8	8.5	6.0	7.0	18.0	11.0	14.5	25.0	21.0	23.0	27.5	22.5	25.0
9	6.0	3.0	4.5	18.0	14.5	16.5	20.5	17.0	18.0	24.5	20.0	22.0
10	4.0	1.5	3.0	18.0	12.5	15.5	18.0	16.0	17.0	27.5	21.0	24.0
11	5.0	1.0	3.0	18.5	14.0	16.0	23.0	16.0	19.5	27.5	20.5	24.0
12	3.5	2.0	3.0	17.0	11.5	14.5	23.0	18.5	20.5	26.5	22.5	24.5
13	9.0	1.5	5.0	16.0	12.5	14.5	24.5	18.5	21.5	27.5	21.5	24.5
14	10.5	6.5	8.5	16.0	11.5	14.0	22.5	17.0	20.0	28.0	24.5	26.0
15	13.0	7.0	10.0	17.5	12.0	15.0	22.0	16.0	19.5	28.5	22.0	25.0
16	13.0	10.0	11.5	19.0	12.0	15.5	21.5	17.0	19.5	25.5	22.5	24.0
17	14.5	10.0	12.0	18.5	14.5	16.5	24.5	19.0	21.5	23.5	17.0	19.0
18	15.0	10.5	13.0	17.5	14.0	16.0	25.5	20.0	22.5	23.0	15.0	18.5
19	17.5	12.0	15.0	16.5	11.0	14.0	21.0	18.0	19.5	24.5	16.0	20.0
20	17.0	12.0	14.5	14.5	10.5	13.0	23.0	15.0	19.0	23.0	18.0	20.5
21	13.0	8.5	10.5	17.0	9.0	13.0	24.0	17.0	20.5	24.5	18.5	21.0
22	12.5	6.5	10.0	17.5	11.0	15.0	23.5	18.0	21.0	25.5	19.5	22.0
23	14.5	8.0	11.5	19.5	13.0	16.5	24.5	19.5	22.0	24.0	20.5	22.0
24	16.0	9.5	13.0	20.0	14.5	17.5	26.5	21.0	23.5	26.0	21.5	23.5
25	17.0	10.5	14.0	19.5	15.0	17.5	26.0	21.0	23.5	24.0	18.0	22.0
26	18.0	11.5	15.0	22.5	15.5	19.0	25.5	20.5	23.0	23.0	19.0	20.5
27	16.0	12.5	13.5	23.0	17.0	20.5	24.5	20.5	22.5	24.5	19.0	21.5
28	16.0	11.0	13.5	23.0	17.0	20.5	25.0	18.0	21.5	26.5	19.5	23.0
29	---	---	---	21.0	17.0	19.5	27.0	21.5	24.0	25.0	21.5	23.0
30	---	---	---	23.5	16.5	20.0	25.0	23.0	24.0	21.0	18.0	19.5
31	---	---	---	24.5	18.5	21.5	---	---	---	22.0	19.5	20.5
MONTH	18.0	1.0	10.5	24.5	9.0	16.0	27.0	15.0	21.0	28.5	15.0	22.5

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	25.0	21.0	22.5	28.5	25.5	27.0	31.0	23.5	27.5	24.5	22.5	23.5
2	25.0	20.5	22.5	27.5	25.0	26.0	29.0	24.5	27.0	24.0	22.0	23.0
3	22.0	19.5	20.5	28.5	23.5	26.0	28.0	23.5	25.5	24.0	22.0	23.5
4	25.0	21.0	22.5	26.5	22.5	24.0	29.5	23.5	26.0	22.5	22.0	22.0
5	23.0	19.0	20.5	29.0	24.0	26.0	30.5	23.5	27.0	22.5	22.0	22.0
6	24.0	21.0	22.5	29.0	24.5	26.5	31.0	24.0	27.5	23.5	22.0	22.5
7	24.5	23.5	24.0	29.0	25.0	27.0	30.5	25.0	27.5	23.0	21.5	22.5
8	25.0	24.0	24.5	30.0	24.5	27.0	27.5	25.5	26.5	21.0	19.5	20.0
9	27.5	23.0	25.0	30.0	24.5	27.0	30.0	24.0	26.5	22.5	19.5	20.5
10	28.0	25.0	26.5	29.5	24.5	27.0	---	---	---	25.5	21.5	23.5
11	28.0	25.0	26.5	30.0	25.5	27.5	---	---	---	27.5	23.0	25.0
12	29.5	23.0	26.0	29.5	25.0	27.0	---	---	---	26.5	21.5	24.0
13	29.5	24.0	27.0	29.0	24.5	26.5	---	---	---	26.5	22.5	24.5
14	30.0	25.0	27.5	28.5	23.5	26.0	---	---	---	27.0	24.0	25.5
15	29.5	24.5	27.0	28.5	23.5	26.0	27.0	24.0	26.0	28.0	24.0	26.0
16	31.0	21.5	26.5	28.5	24.5	26.0	31.0	24.0	27.0	28.0	24.5	26.0
17	22.5	19.5	22.0	29.0	24.5	26.5	31.0	26.0	28.5	29.0	24.5	26.5
18	24.0	22.0	22.5	29.5	24.5	27.0	31.5	26.0	29.0	29.0	25.0	27.0
19	25.5	22.5	23.5	30.0	24.0	27.0	33.0	26.0	29.0	29.0	25.0	27.0
20	28.0	23.5	25.5	30.5	24.0	27.0	31.0	25.0	28.0	27.5	24.5	26.0
21	27.0	24.0	25.5	29.5	23.5	26.5	28.5	25.0	26.5	28.0	24.0	26.0
22	30.0	24.0	26.5	27.0	23.5	25.5	28.5	24.5	26.0	28.5	24.0	26.5
23	29.0	25.5	27.5	30.0	23.5	26.5	27.0	24.0	25.5	28.5	24.5	26.5
24	30.0	24.5	27.0	31.0	24.0	27.5	---	---	---	28.0	24.5	26.5
25	29.5	24.5	27.0	32.0	24.5	28.0	26.0	20.0	23.5	27.5	23.5	25.5
26	30.5	24.5	27.5	31.5	24.5	28.0	23.0	19.5	21.5	28.0	24.0	25.5
27	31.0	25.5	28.0	31.5	24.0	28.0	24.0	19.5	22.0	27.5	22.0	25.0
28	32.0	26.0	29.0	32.0	24.0	27.5	23.0	22.0	22.0	25.5	24.0	24.5
29	32.0	27.0	29.5	32.0	24.0	28.0	23.0	21.0	22.0	26.0	23.5	24.5
30	31.0	26.5	28.5	31.5	24.0	27.5	24.0	21.0	22.0	25.0	23.5	24.0
31	---	---	---	31.0	23.0	27.5	25.0	22.0	23.5	---	---	---
MONTH	32.0	19.0	25.5	32.0	22.5	27.0	33.0	19.5	25.5	29.0	19.5	24.5

08121000 COLORADO RIVER AT COLORADO CITY, TX

LOCATION.--Lat 32°23'33", long 100°52'42", Mitchell County, Hydrologic Unit 12080002, on right bank at Colorado City, 3,517 ft upstream from bridge on State Highway 377, 4,100 ft upstream from the Texas and Pacific Railroad Co. bridge, 1.3 mi downstream from bridge on Interstate Highway 20 and U.S. Highway 80, 1.6 mi upstream from Lone Wolf Creek, and at mile 796.3.

DRAINAGE AREA.--3,966 mi², of which 2,381 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1923 to August 1925 (published as "at Colorado"), May 1946 to current year.

REVISED RECORDS.--WSP 1512: 1946(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,030.16 ft above National Geodetic Vertical Datum of 1929. Nov. 28, 1923, to Aug. 31, 1925, nonrecording gage at site 1.4 mi downstream at different datum. May 9 to Aug. 5, 1946, nonrecording gage at site 185 ft upstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Some regulation since 1952 by Lake J. B. Thomas (station 08118000). There are numerous diversions from Lake J. B. Thomas for municipal use and oilfield operation.

AVERAGE DISCHARGE.--6 years (water years 1947-52) prior to completion of Lake J. B. Thomas, 85.4 ft³/s (61,870 acre-ft/yr); 34 years (water years 1953-86) regulated, 38.1 ft³/s (27,600 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,900 ft³/s July 6, 1948 (gage height, 22.37 ft, from floodmark); maximum gage height, 27.81 ft Sept. 29, 1980, backwater from salt cedar; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 35.9 ft June 20, 1939, present site and datum, based on floodmarks 1,000 ft upstream and 3,740 ft downstream from gage; discharge, 66,000 ft³/s, by slope-area measurement of peak flow at site 2.5 mi upstream from gage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,330 ft³/s June 5 at 1400 hours (gage height, 14.79 ft); minimum daily, 0.02 ft³/s May 21-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	.62	.41	.41	.41	.16	.09	.05	84	2.1	.16	3.0
2	.24	.62	.41	.44	.48	.23	.11	.05	89	2.1	.09	566
3	.24	.58	.45	.41	.60	.19	.12	.05	357	2.5	.10	1520
4	.24	.41	.61	.41	.32	.18	.15	.05	450	141	.09	1870
5	.20	.41	.41	.37	.53	.15	.15	.04	1300	222	.14	1610
6	.24	.41	.49	.41	.34	.15	.18	.04	1350	53	.14	872
7	.24	.41	.59	.48	.28	.15	.15	.05	879	22	.14	627
8	.26	.41	.53	.41	.25	.15	.09	.05	592	14	.12	323
9	.34	.41	.50	.41	.24	.15	.15	.04	207	11	.10	161
10	17	.41	.49	.41	.15	.15	.16	.05	172	7.7	.13	85
11	.56	.41	.41	.41	.15	.16	.12	.04	109	6.4	.17	43
12	.54	.46	.41	.41	.15	.23	.11	.04	96	2.5	.24	7.0
13	.41	.62	.41	.41	.20	.23	.09	.03	42	2.5	.21	1.8
14	1.2	.62	.41	.41	.24	.20	.07	.03	5.1	1.8	.15	.92
15	.53	.50	.41	.41	.24	.20	.05	.03	.05	.62	1.3	.92
16	.41	.43	.41	.41	.24	.16	.05	.05	3.9	.62	.39	.92
17	38	.62	.41	.41	.24	.24	.05	.05	284	.41	.24	.92
18	302	.50	.41	.41	.25	.24	.05	.05	360	.24	.24	.92
19	517	.41	.41	.41	.35	.20	.10	.05	278	.24	.21	.92
20	168	.41	.41	.41	.28	.15	.10	.04	165	.24	.15	.92
21	2.3	.41	.41	.41	.20	.15	.05	.02	70	.24	.15	.92
22	.76	.41	.41	.41	.17	.15	.05	.02	26	.24	.15	.92
23	.62	.41	.41	.41	.15	.15	.05	.02	3.6	.24	.23	.92
24	.60	.41	.41	.41	.17	.15	.05	.03	3.2	.24	.24	.92
25	.46	.41	.41	.41	.23	.18	.13	.09	3.6	.24	.36	.92
26	.62	.41	.41	.41	.24	.15	.31	.18	3.6	.21	167	.91
27	.62	.41	.41	.41	.24	.09	.06	.07	3.6	.20	565	.90
28	.62	.41	.41	.38	.19	.09	.05	.05	2.5	.21	82	.64
29	.62	.47	.41	.26	---	.09	.05	2.7	2.1	.23	16	4.3
30	.44	.47	.41	.24	---	.12	.05	55	2.1	.22	21	5.3
31	.46	---	.41	.26	---	.11	---	223	---	.22	1.1	---
TOTAL	1056.01	13.89	13.50	12.27	7.53	5.10	2.99	282.06	6943.35	495.46	857.74	7711.89
MEAN	34.1	.46	.44	.40	.27	.16	.10	9.10	231	16.0	27.7	257
MAX	517	.62	.61	.48	.60	.24	.31	223	1350	222	565	1870
MIN	.20	.41	.41	.24	.15	.09	.05	.02	.05	.20	.09	.64
AC-FT	2090	28	27	24	15	10	5.9	559	13770	983	1700	15300

CAL YR 1985 TOTAL 11042.24 MEAN 30.3 MAX 1490 MIN .02 AC-FT 21900
WTR YR 1986 TOTAL 17401.79 MEAN 47.7 MAX 1870 MIN .02 AC-FT 34520

08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1946 to September 1954, November 1956 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1946 to September 1954, November 1956 to current year.
WATER TEMPERATURES: November 1952 to September 1954, November 1956 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 67,400 microsiemens May 14, 17, 1961; minimum daily, 240 microsiemens Sept. 29, 1980.
WATER TEMPERATURES: Maximum daily, 37.0°C July 29, 1960, July 9, 1965, July 1, 1973, and June 29, 1979; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 33,400 microsiemens May 23, 27; minimum daily, 501 microsiemens June 7.
WATER TEMPERATURES: Maximum daily, 32.0°C June 23; minimum daily, 1.5°C Feb. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 30...	0745	0.38	6310	14.5	840	620	170	100	1200
DEC 10...	1710	0.49	17800	7.0	1600	1400	390	150	3900
JAN 22...	1750	0.33	23600	11.0	2000	1800	450	210	4900
APR 15...	1610	0.06	27500	29.0	2100	2000	480	230	6000
JUN 04...	0850	496	760	21.5	120	58	37	7.7	98
JUL 23...	0840	0.23	7700	23.5	820	640	180	90	1400

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 30...	19	7.4	213	1100	1500	0.6	2.9	4200
DEC 10...	44	11	230	1900	5700	0.7	0.5	12000
JAN 22...	49	12	180	2100	7300	0.7	0.2	15000
APR 15...	58	18	121	2600	9100	0.7	1.5	19000
JUN 04...	4	4.6	66	69	140	0.3	5.4	400
JUL 23...	22	9.0	182	1100	1900	0.7	5.8	4800

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1985	1056.01	1280	828	2360	340	974	180	499	160
NOV.	1985	13.89	10000	6500	244	2900	107	1200	45	*
DEC.	1985	13.50	17200	11200	408	5200	188	1800	66	*
JAN.	1986	12.27	21500	14000	464	6700	221	2100	69	*
FEB.	1986	7.53	21700	14100	287	6700	137	2100	42	*
MAR.	1986	5.10	24400	15900	219	7700	106	2200	30	*
APR.	1986	2.99	27800	18200	147	9000	73	2300	18	*
MAY	1986	282.06	2650	1720	1310	730	559	340	257	320
JUNE	1986	6943.35	1150	743	13900	300	5690	160	3000	150
JULY	1986	495.46	2200	1420	1910	590	786	300	403	280
AUG.	1986	857.74	1410	914	2120	370	865	200	456	180
SEPT	1986	7711.89	807	522	10900	210	4420	110	2370	110
TOTAL		17401.79	**	**	34300	**	14100	**	7260	**
WTD.AVG.		48	1130	729	**	300	**	150	**	140

08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12800	6620	14500	21400	22300	23900	26100	30600	3020	9150	8790	4820
2	13100	6800	13700	22000	22600	22800	26300	30300	3630	9400	9000	1560
3	13200	6990	15600	21100	21800	22600	26600	30200	1410	9680	8730	725
4	13600	7160	14900	21700	20700	24600	25700	30400	800	2750	8830	608
5	13900	7310	14800	21300	19000	23500	26400	30500	673	1320	8920	530
6	13800	7700	14700	21000	17000	22500	26200	30600	516	1530	8940	625
7	14400	8130	16900	20700	22700	23900	26500	31100	501	1910	9020	740
8	14200	8510	16700	22100	23100	23500	27000	31500	586	2910	9130	806
9	13500	8940	17500	21900	23300	23100	27800	32000	1880	3590	9170	1850
10	7900	9360	17900	19800	23600	22900	27700	30800	2400	4400	9200	3100
11	15400	9730	17200	20600	20500	23600	28600	30300	2800	5130	9210	4020
12	14800	10100	15400	21400	21900	23900	26300	30600	3070	5510	9000	4910
13	14300	9220	16500	22000	21500	23400	26700	29300	3970	5920	9110	5640
14	9150	9180	17100	21200	21200	22800	28000	29600	4910	6270	8220	6100
15	8730	9030	17700	20600	22800	25400	27700	29900	6240	6450	7210	6780
16	10300	9590	18400	21900	21200	25200	28200	31000	6750	6730	6920	7290
17	5100	10100	17200	21400	20300	24300	28800	30900	2840	6880	7360	7670
18	1520	10700	18100	20500	20400	25300	29300	30700	1130	7140	7960	8130
19	540	10500	18500	21400	20700	24900	28700	30600	1810	7280	8220	8510
20	1050	10400	18800	21200	21100	24200	29000	30400	2530	7430	8380	8650
21	2200	11200	19400	20400	23400	25000	30100	30700	2370	7510	8540	8790
22	3340	11600	18200	21900	23600	25300	30400	32000	3230	7570	8620	8920
23	4070	11900	17800	23600	23800	25700	31900	33400	4360	7680	8700	9040
24	4530	12100	18000	23200	22300	25900	32300	32300	5370	7890	8800	9290
25	5150	12900	18100	22700	23700	26400	30700	25800	6290	8070	8670	9210
26	5460	12300	18100	22100	22500	26000	26200	23200	7130	8220	2250	9120
27	5820	13000	17900	21300	23100	25800	32100	33400	8200	8380	903	9290
28	6000	14000	18300	22300	23800	25500	32500	32700	8550	8510	1970	9690
29	6140	14700	18500	20800	---	25300	32900	31900	8890	8590	3430	7750
30	6260	15200	20500	21900	---	25800	31000	4000	9160	8730	2820	7200
31	6440	---	19200	22900	---	25200	---	1800	---	8750	3960	---
MEAN	8600	10200	17300	21600	21900	24500	28600	28800	3830	6490	7420	5710

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.5	---	---	10.0	15.0	10.0	18.5	22.0	---	26.0	26.5	25.5
2	---	---	3.0	11.0	16.5	16.5	18.5	21.0	23.0	28.0	26.5	24.0
3	---	---	4.5	11.5	14.5	12.0	20.0	---	22.0	25.0	24.0	---
4	---	16.5	8.0	6.5	11.5	12.0	17.0	---	22.0	24.5	24.0	23.5
5	---	14.5	8.0	5.0	10.0	12.0	---	22.0	22.0	25.0	25.0	---
6	---	---	9.5	13.0	10.0	14.0	---	24.0	22.0	28.5	25.5	---
7	---	---	8.5	2.5	12.0	15.5	23.0	25.0	23.5	25.0	26.0	---
8	---	---	10.5	7.0	---	---	23.5	22.0	23.5	26.5	26.5	20.5
9	---	---	12.5	9.0	---	---	16.0	20.5	24.5	26.0	---	21.0
10	---	---	7.0	3.0	1.5	13.5	15.0	19.5	27.0	26.0	---	23.0
11	26.5	---	4.0	---	3.0	12.5	19.0	23.0	27.0	27.0	27.0	23.0
12	22.0	---	3.5	---	3.0	14.0	19.5	21.5	27.0	---	27.0	22.5
13	24.5	---	3.0	12.5	3.5	13.0	25.0	23.0	26.5	---	26.0	26.0
14	20.0	20.5	---	7.0	9.0	13.0	16.5	---	---	31.5	27.0	26.0
15	18.0	13.0	---	7.5	9.5	13.0	19.0	24.0	---	26.5	25.0	24.0
16	20.0	---	3.0	7.5	15.0	19.0	---	24.0	26.5	27.0	26.0	24.5
17	18.5	---	4.5	---	---	14.0	---	---	23.5	26.0	27.5	24.5
18	18.5	16.5	5.0	7.0	14.0	16.0	---	---	24.0	26.5	27.5	24.5
19	---	15.0	---	7.5	13.5	14.0	---	14.5	25.0	25.0	29.0	31.0
20	---	9.0	6.0	6.5	13.5	13.5	---	21.5	26.0	---	27.5	---
21	19.0	10.5	3.0	9.0	14.5	11.0	22.0	20.0	26.0	27.0	26.5	---
22	20.0	11.5	8.0	6.0	---	---	22.0	22.0	27.0	25.0	26.0	24.0
23	20.0	11.0	5.5	5.0	---	---	20.5	23.0	32.0	25.0	---	25.0
24	21.0	10.0	7.5	8.5	9.0	15.0	22.0	---	30.0	26.0	---	24.0
25	19.0	13.0	5.0	---	11.5	17.0	22.5	24.0	28.5	27.5	23.5	24.0
26	19.0	18.0	6.5	---	14.0	17.0	22.5	21.5	29.0	---	23.0	25.0
27	22.0	11.5	7.0	4.0	15.0	17.5	18.0	20.0	28.0	---	21.0	24.5
28	21.0	11.0	---	6.0	13.5	19.0	17.5	22.0	---	27.0	21.0	25.0
29	19.0	11.0	4.5	7.0	---	17.5	23.0	23.5	---	25.5	21.5	25.0
30	18.5	11.0	6.5	10.5	---	21.0	22.0	19.5	26.0	26.5	25.0	---
31	16.0	---	7.0	13.0	---	20.0	---	22.0	---	26.5	26.0	---
MEAN	20.0	13.0	6.0	8.0	11.0	15.0	20.0	22.0	25.5	26.5	25.5	24.5

08123000 LAKE COLORADO CITY NEAR COLORADO CITY, TX

LOCATION.--Lat 32°20'41", long 100°55'10", Mitchell County, Hydrologic Unit 12080002, on left bank at municipal water-intake structure, 1.7 mi upstream from Colorado City Dam on Morgan Creek, 2.2 mi downstream from the Texas and Pacific Railway Co. bridge, 2.5 mi upstream from mouth, and 4.0 mi southwest of Colorado City.

DRAINAGE AREA.--344.7 mi², of which 42.7 mi² probably is noncontributing.

PERIOD OF RECORD.--April 1949 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Aug. 23, 1950, nonrecording gages at or near powerplant about 0.7 mi downstream at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 4,800 ft long. Storage began in April 1949, and the dam was completed in September 1949. The dam and lake are owned by the Texas Electric Service Co. to operate their thermal electric powerplant. The uncontrolled spillway is an excavated cut channel through natural ground 1,200 ft wide located 600 ft upstream and to the left of left end of dam. The spillway is designed to discharge 150,000 ft³/s at the maximum design flood elevation. The service spillway is an uncontrolled rectangular drop inlet located 100 ft upstream from dam with two uncontrolled openings of 10.0 by 12.0 ft. The spillway is designed for a maximum discharge of 5,000 ft³/s. A service outlet is provided for small releases downstream through a 30-inch valve-controlled concrete pipe. Records furnished by the Texas Electric Service Co. will show pumpage from Champion Creek Reservoir (station 08123600) into Lake Colorado City. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	2,090.0	-
Design flood..	2,086.7	70,700
Crest of spillway..	2,073.7	37,850
Crest of service spillway (top of conservation pool)..................	2,070.2	31,810
Lowest gated outlet (invert)..	2,024.3	316

COOPERATION.--Capacity curve was furnished by the Texas Electric Service Co. Record of diversions for municipal use was furnished by the city of Colorado City.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 40,280 acre-ft Sept. 7, 1962 (elevation, 2,075.10 ft); minimum since first appreciable storage, 5,800 acre-ft Apr. 11-13, 1950 (elevation, 2,045.72 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 32,340 acre-ft Sept. 7 at 2400 hours (elevation, 2,070.53 ft); minimum, 17,080 acre-ft May 21-23 (elevation, 2,059.19 ft).

Capacity table (elevation, in feet, and contents, in acre-feet)

2,059.0	16,880	2,067.0	26,930
2,063.0	21,540	2,071.0	33,110

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19360	20410	19740	19250	18730	18250	17370	17130	20430	25500	23950	24930
2	19340	20380	19710	19230	18740	18230	17330	17130	20590	25510	23900	26430
3	19320	20340	19700	19230	18750	18190	17290	17140	20740	25510	23860	27190
4	19260	20320	19670	19180	18730	18180	17260	17140	21080	25510	23810	28220
5	19240	20310	19660	19180	18750	18160	17240	17140	21940	25500	23750	30880
6	19200	20270	19650	19160	18750	18130	17210	17130	22600	25450	23690	32130
7	19170	20250	19640	19100	18730	18100	17190	17130	22660	25410	23620	32340
8	19140	20240	19630	19070	18690	18090	17150	17130	23080	25340	23570	32320
9	19170	20210	19600	19070	18670	18060	17120	17130	24480	25290	23510	32310
10	19360	20180	19580	19050	18640	18010	17100	17130	24910	25230	23460	32290
11	19370	20100	19540	19050	18610	18000	17120	17130	24900	25190	23510	32190
12	19370	20090	19530	19030	18600	17930	17130	17140	24870	25140	23490	32110
13	19340	20140	19510	19020	18590	17920	17130	17160	24830	25050	23420	32050
14	19360	20140	19500	19000	18580	17910	17120	17160	24790	24980	23370	32000
15	19320	20120	19470	19000	18580	17880	17100	17140	24740	24930	23370	31950
16	19300	20090	19470	18990	18550	17850	17120	17140	25000	24830	23340	31920
17	19560	20080	19460	18980	18530	17830	17130	17130	25440	24780	23300	31900
18	19940	20070	19440	18970	18520	17790	17120	17100	25510	24720	23280	31850
19	20430	20020	19440	18960	18490	17740	17150	17120	25790	24680	23220	31810
20	20580	20000	19430	18950	18460	17720	17160	17100	25850	24640	23160	31770
21	20600	19970	19410	18920	18430	17700	17150	17080	25860	24590	23100	31720
22	20600	19960	19400	18890	18410	17670	17160	17080	25830	24530	23040	31690
23	20600	19940	19370	18890	18400	17630	17140	17080	25820	24480	23030	31630
24	20580	19880	19370	18850	18370	17590	17150	17210	25820	24420	22970	31580
25	20560	19860	19340	18830	18360	17570	17190	17420	25790	24380	22950	31550
26	20550	19860	19330	18820	18350	17530	17190	17850	25750	24330	22950	31520
27	20540	19840	19320	18810	18300	17510	17130	18180	25710	24270	23070	31500
28	20530	19830	19310	18790	18270	17490	17100	18270	25650	24220	23170	31470
29	20480	19820	19300	18760	---	17450	17100	18440	25590	24150	23370	31420
30	20450	19790	19280	18750	---	17430	17120	18840	25510	24090	23610	31390
31	20430	---	19260	18740	---	17400	---	20150	---	24010	23910	---
MAX	20600	20410	19740	19250	18750	18250	17370	20150	25860	25510	23950	32340
MIN	19140	19790	19260	18740	18270	17400	17100	17080	20430	24010	22950	24930
(†)	2062.10	2061.57	2061.12	2060.67	2060.26	2059.48	2059.22	2061.87	2066.00	2064.90	2064.83	2069.94
(Φ)	+1060	-640	-530	-520	-990	-870	-280	+3030	+5360	-1500	-100	+7480

CAL YR 1985 MAX 20600 MIN 16290 (Φ) +1460
WTR YR 1986 MAX 32340 MIN 17080 (Φ) +11500

(†) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

08123600 CHAMPION CREEK RESERVOIR NEAR COLORADO CITY, TX

LOCATION.--Lat 32°16'53", long 100°51'30", Mitchell County, Hydrologic Unit 12080002, in service outlet structure at Champion Creek Dam on Champion Creek, 1.0 mi upstream from mouth, 4.8 mi downstream from State Highway 208, and 7.2 mi south of Colorado City.

DRAINAGE AREA.--206.8 mi², of which 20.8 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WRD TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 29, 1959, nonrecording gages at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam about 6,800 ft long. The dam was completed on Apr. 30, 1959. Closure and storage began in February 1959. The capacity curve is based on Geological Survey topographic map surveyed in 1950; excavation for borrow, estimated not to exceed 1,200 acre-ft, is not included. The dam and reservoir are owned and operated by the Texas Electric Service Company. Water may be pumped from the reservoir through a 24-inch pipeline to Lake Colorado City (station 08123000) for municipal use and for cooling operations of a steam generating powerplant. There are two spillways. The uncontrolled emergency spillway, 450 ft wide and 800 ft long, is located at the right end of dam. The controlled service spillway, is a cut channel 50 ft wide, about 1,800 ft long, and 8 ft deep, and cut into the emergency spillway at the extreme right end. There is a controlled drop-inlet structure, 4.0 by 5.0 ft, with a side opening of 1.5 by 3.0 ft. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	2,109.0	-
Design flood..	2,104.0	90,020
Crest of spillway...	2,091.0	56,800
Crest of spillway (top of conservation pool)......................	2,083.0	42,500
Lowest gated outlet (invert)......................................	2,020.0	800

COOPERATION.--Record of diversions into Lake Colorado City may be obtained from Texas Electric Service Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 47,060 acre-ft June 29, 1982 (elevation, 2,085.79 ft); minimum 1,600 acre-ft Oct. 1, 1959 (elevation, 1,025.90 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,050 acre-ft Sept. 11-14 (elevation, 2,072.99 ft); minimum, 20,740 acre-ft May 28 (elevation, 2,064.89 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

2,064.0	19,940	2,070.0	25,760
2,067.0	22,720	2,073.0	29,060

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23160	23290	23210	23200	23240	23360	23200	22260	20990	24040	23290	24120
2	23160	23280	23170	23200	23290	23360	23200	22190	21470	24030	23280	24170
3	23160	23270	23160	23200	23310	23360	23190	22140	21770	24020	23280	24670
4	23140	23270	23170	23200	23310	23350	23180	22080	21820	24000	23270	27070
5	23130	23260	23160	23180	23360	23360	23170	22020	23550	23960	23240	28660
6	23120	23260	23160	23200	23360	23350	23170	21960	23720	23930	23210	28940
7	23110	23240	23160	23170	23380	23350	23170	21900	23750	23910	23180	28990
8	23110	23230	23170	23160	23360	23340	23170	21840	23890	23880	23160	29010
9	23140	23240	23180	23150	23350	23340	23160	21790	23900	23850	23130	29030
10	23220	23240	23180	23160	23340	23340	23140	21720	23900	23840	23120	29040
11	23230	23220	23160	23160	23330	23330	23100	21660	23900	23810	23190	29050
12	23240	23220	23150	23170	23330	23320	23060	21610	23900	23790	23190	29050
13	23250	23230	23140	23180	23330	23310	23000	21560	23890	23750	23160	29050
14	23260	23260	23130	23190	23340	23310	22920	21500	23860	23720	23130	29050
15	23250	23230	23130	23200	23340	23310	22860	21430	23850	23700	23130	29040
16	23250	23230	23140	23210	23360	23310	22790	21370	23860	23650	23120	29030
17	23310	23230	23140	23220	23360	23300	22730	21280	23850	23630	23110	29010
18	23330	23240	23140	23220	23370	23300	22680	21230	23990	23600	23100	29000
19	23350	23240	23150	23220	23380	23270	22690	21160	24120	23590	23080	28990
20	23340	23210	23150	23230	23390	23260	22650	21080	24150	23570	23060	28980
21	23340	23190	23160	23250	23370	23250	22610	21010	24170	23550	23030	28970
22	23330	23200	23170	23220	23360	23240	22550	20950	24170	23550	23010	28960
23	23330	23220	23200	23210	23360	23240	22490	20900	24160	23520	23000	28950
24	23320	23210	23180	23220	23360	23230	22420	20840	24160	23500	22970	28940
25	23320	23220	23170	23220	23370	23220	22410	20820	24140	23470	22970	28920
26	23320	23240	23170	23210	23370	23220	22450	20830	24130	23460	22970	28910
27	23310	23230	23180	23210	23380	23220	22440	20800	24110	23430	23100	28910
28	23310	23230	23180	23210	23370	23220	22410	20740	24110	23400	23210	28900
29	23310	23220	23190	23210	---	23210	22350	20780	24080	23380	23260	28880
30	23300	23240	23200	23210	---	23210	22320	21020	24060	23350	23280	28890
31	23300	---	23200	23220	---	23210	---	21020	---	23310	23300	---
MAX	23350	23290	23210	23250	23390	23360	23200	22260	24170	24040	23300	29050
MIN	23110	23190	23130	23150	23240	23210	22320	20740	20990	23310	22970	24120
(†)	2067.59	2067.53	2067.49	2067.51	2067.66	2067.50	2066.57	2065.19	2068.35	2067.60	2067.59	2072.85
(‡)	+140	-60	-40	+20	+150	-160	-890	-1300	+3040	-750	-10	+5590

CAL YR 1985 MAX 26360 MIN 21590 (‡) +1670
WTR YR 1986 MAX 29050 MIN 20740 (‡) +5730

(†) Elevation, in feet, at end of month.
(‡) Change in contents, in acre-feet.

08123720 BEALS CREEK NEAR COAHOMA, TX

LOCATION.--Lat 32°14'56", long 101°21'42", Howard County, Hydrologic Unit 12080007, on left bank near left end of county road bridge, 1.9 mi south of Interstate Highway 20, at Midway, on Moss Creek Lake Road, and 4.7 mi southwest of Coahoma.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--1,569 mi².

PERIOD OF RECORD.--July 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,323 ft above National Geodetic Vertical Daum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: May 17-26, June 14-21, and June 25 to July 20. Records good except those for estimated daily discharges, which are fair. Low flow is affected at times by upstream diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft³/s Aug. 31, 1986 (gage height, 12.17 ft); no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,930 ft³/s Aug. 31 at 0145 hours (gage height, 12.17 ft); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.06	.02	.04	.03	.02	.03	.02	4.1	.20	.00	194
2	.07	.06	.03	.04	.03	.02	.03	.00	233	.15	.00	94
3	.05	.06	.06	.05	.03	.02	.03	.01	381	.10	.00	272
4	.05	.06	.05	.05	.03	.03	.03	.01	104	.10	.00	387
5	.05	.06	.04	.05	.03	.03	.03	.01	97	.10	.00	377
6	.05	.07	.04	.06	.03	.03	.03	.00	133	.05	.00	234
7	.07	.07	.05	.06	.03	.05	.03	.00	115	.05	.00	181
8	.07	.06	.05	.06	.02	.05	.03	.00	104	.05	.00	244
9	.10	.06	.06	.06	.02	.05	.03	.00	72	.05	.00	702
10	23	.07	.06	.06	.03	.05	.03	.00	50	.05	.00	725
11	.13	.07	.06	.06	.03	.05	.03	.00	33	.03	.00	564
12	.06	.08	.09	.06	.03	.05	.03	.00	20	.03	.00	491
13	.05	.09	.07	.04	.03	.05	.03	.00	19	.03	.00	438
14	.05	.07	.06	.04	.03	.05	.03	.00	13	.03	.00	378
15	.05	.06	.06	.04	.03	.05	.02	.00	2.0	.02	.00	367
16	.05	.06	.06	.04	.02	.05	.03	.00	1.0	.02	.00	332
17	.97	.07	.06	.04	.02	.05	.03	.00	1.0	.02	.00	293
18	27	.07	.06	.04	.01	.05	.02	.00	.75	.02	.00	264
19	2.1	.05	.06	.05	.01	.05	.02	.00	.75	.02	.00	242
20	.10	.02	.06	.05	.01	.05	.02	.00	.50	.02	.00	227
21	.07	.05	.06	.05	.00	.05	.02	.00	32	.02	.00	217
22	.06	.05	.06	.05	.01	.05	.01	.00	299	.02	.00	211
23	.06	.05	.06	.05	.01	.05	.01	.00	62	.02	.00	204
24	.05	.05	.06	.05	.01	.05	.01	1140	22	.00	.00	196
25	.05	.05	.06	.05	.01	.04	.00	874	15	.00	45	184
26	.06	.05	.06	.05	.01	.04	.00	325	3.0	.00	5.0	173
27	.07	.05	.05	.05	.02	.03	.00	126	1.0	.00	.04	167
28	.06	.05	.05	.05	.02	.03	.00	51	.75	.00	77	171
29	.06	.04	.10	.05	---	.03	.00	23	.50	.00	11	164
30	.06	.04	.06	.05	---	.03	.01	182	.25	.00	195	142
31	.06	---	.05	.05	---	.03	---	22	---	.00	1370	---
TOTAL	54.81	1.75	1.77	1.54	.59	1.28	.62	2743.05	1819.60	1.20	1703.04	8835
MEAN	1.77	.06	.06	.05	.02	.04	.02	88.5	60.7	.04	54.9	295
MAX	27	.09	.10	.06	.03	.05	.03	1140	381	.20	1370	725
MIN	.05	.02	.02	.04	.00	.02	.00	.00	.25	.00	.00	94
AC-FT	109	3.5	3.5	3.1	1.2	2.5	1.2	5440	3610	2.4	3380	17520

CAL YR 1985	TOTAL 2615.44	MEAN	7.17	MAX	512	MIN	.00	AC-FT	5190
WTR YR 1986	TOTAL 15164.25	MEAN	41.5	MAX	1370	MIN	.00	AC-FT	30080

08123720 BEALS CREEK NEAR COAHOMA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: June 1983 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUSTANCE: June 1983 to current year.
WATER TEMPERATURES: June 1983 to current year.

INSTRUMENTATION.--Beginning August 1983, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum specific conductance values are not shown, mean value is eatimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 15,900 microsiemens May 18, 1984; minimum daily, 400 microsiemens June 6, 1985.
WATER TEMPERATURES: Maximum daily, 35.5°C May 24, 1986; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 15,300 microsiemens Sept. 3; minimum daily, 600 microsiemens June 3.
WATER TEMPERATURES: Maximum daily 35.5°C May 24; minimum daily, 0.0°C on several days during December and January.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 28...	1300	0.06	10900	20.5	2700	2400	380	420	1700
DEC 09...	1125	0.06	11500	11.5	2400	2100	360	360	1800
JAN 21...	1225	0.05	12300	13.0	2600	2300	340	430	1900
APR 14...	1155	0.03	11900	19.0	2600	2200	390	390	1800
MAY 27...	1340	127	2750	19.5	580	490	100	80	340
JUN 02...	1220	51	3480	21.5	790	680	150	100	430
SEP 10...	1130	720	9200	23.5	1900	1700	300	270	1500

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 28...	15	42	269	1900	3100	0.7	2.0	7700
DEC 09...	16	37	274	2100	2900	0.8	10	7700
JAN 21...	16	38	305	1900	3200	0.8	16	8000
APR 14...	16	41	346	2100	3200	0.8	20	8100
MAY 27...	6	12	90	390	590	0.3	7.2	1600
JUN 02...	7	15	103	460	780	0.3	7.3	2000
SEP 10...	15	68	115	1900	2200	0.8	5.0	6300

08123720 BEALS CREEK NEAR COAHOMA, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	54.81	5850	3770	558	1400	207	990	146	1300
NOV. 1985	1.75	11300	7520	36	2900	14	1900	9.1	*
DEC. 1985	1.77	12000	8020	38	3100	15	2000	9.8	*
JAN. 1986	1.54	12300	8260	34	3200	13	2100	8.8	*
FEB. 1986	0.59	12800	8590	14	3400	5.4	2200	3.5	*
MAR. 1986	1.28	11800	7900	27	3100	11	2000	7.0	*
APR. 1986	0.62	11200	7460	12	2900	4.9	1900	3.2	*
MAY 1986	2743.05	1920	1210	8930	430	3170	320	2390	430
JUNE 1986	1819.60	4120	2630	12900	960	4740	700	3420	920
JULY 1986	1.20	9370	6180	20	2400	7.7	1600	5.2	2100
AUG. 1986	1703.04	3140	2010	9260	740	3400	530	2440	700
SEPT 1986	8835	6820	4440	106000	1700	39900	1200	27600	1500
TOTAL	15164.25	**	**	138000	**	51500	**	36000	**
WTD.AVG.	42	5190	3370	**	1300	**	880	**	1200

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	5500	3700	4400	11000	10800	10900	12100	11800	11900	12400	12200	12300
2	9300	5200	7920	11000	10800	10900	12500	12100	12200	12600	12300	12400
3	10300	9400	9910	11200	11000	11100	12300	11900	12100	12800	12300	12600
4	11000	10300	10700	11300	11100	11200	12000	11700	11800	12500	12300	12400
5	11300	11000	11200	11400	11100	11200	11800	11500	11700	12500	12300	12400
6	11300	11100	11200	11200	11000	11100	11800	11600	11700	12400	12200	12300
7	11200	10900	11100	11100	11000	11100	11800	11600	11700	12500	12300	12400
8	11200	11000	11100	11100	10800	11000	11900	11500	11700	12700	12300	12400
9	11100	9500	10800	11100	10800	10900	11600	11400	11500	12700	11600	12300
10	11600	3900	6480	11100	11000	11100	11800	11600	11700	12200	11500	11900
11	5700	3800	4970	11100	11000	11100	11800	11300	11700	12000	11700	11900
12	5400	4000	4710	11100	10900	11000	11400	10900	11100	12100	11900	12000
13	9300	5500	8090	11100	10900	11000	11800	11100	11400	12100	11900	12000
14	11300	9300	10300	11200	10900	11000	12200	11800	12100	12200	12000	12100
15	11600	11300	11400	11500	11100	11300	12100	11700	11900	12200	12000	12100
16	11900	11500	11600	11800	11500	11700	12200	11700	11900	12300	12100	12200
17	11900	5400	10300	11900	11500	11700	12200	11700	12000	12400	12100	12300
18	10700	1400	4960	11600	11300	11400	12300	12000	12200	12400	12100	12300
19	5800	4900	5450	12000	11300	11500	12400	11700	12200	12400	12200	12300
20	5900	4000	4860	12300	11500	11700	12400	12000	12200	12400	12200	12300
21	8800	5100	6690	11800	11600	11800	12300	12100	12200	12600	12300	12400
22	9900	8900	9600	11800	11500	11600	12200	12000	12100	12700	12500	12600
23	10800	9900	10300	11600	11300	11500	12300	12100	12200	12700	12400	12600
24	11000	10800	10900	11600	11400	11500	12300	12100	12200	12600	12400	12500
25	11200	10100	11000	11500	11400	11400	12400	12200	12300	12600	12400	12500
26	11300	10200	11100	11500	11400	11400	12300	12100	12200	12700	12400	12500
27	11400	10300	11300	11600	11400	11500	12400	12200	12300	12500	12200	12300
28	11600	10300	10900	11800	11500	11600	12500	12200	12300	12300	12100	12200
29	10900	10800	10900	11800	11700	11800	12400	12100	12300	12300	12100	12200
30	11100	10900	11000	11800	11600	11700	12200	11900	12100	12400	12200	12300
31	11100	10900	11000	---	---	---	12400	12200	12300	12400	12300	12400
MONTH	11900	1400	9230	12300	10800	11300	12500	10900	12000	12800	11500	12300

08123720 BEALS CREEK NEAR COAHOMA, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12300	12100	12200	12800	12500	12600	11600	11400	11500	10700	10500	10600
2	12300	12000	12100	12700	12400	12600	11500	11300	11400	---	---	---
3	12000	11900	12000	12600	12400	12500	11600	11400	11500	10600	10500	10500
4	12200	11900	12100	12500	12200	12300	11500	11300	11400	10600	10400	10500
5	12100	11600	11800	12200	11700	12000	11400	11100	11200	10700	10400	10500
6	11900	11700	11800	11700	11400	11500	11300	11100	11200	---	---	---
7	12200	11900	12000	11400	11100	11200	11100	10900	11100	---	---	---
8	12500	12200	12300	11200	11000	11100	11100	10800	10900	---	---	---
9	13100	12400	12800	11000	10800	10900	11100	10900	11000	---	---	---
10	13400	13100	13300	11000	10900	10900	11000	10600	10800	---	---	---
11	13500	13300	13400	10900	10800	10900	10600	10400	10500	---	---	---
12	13600	13300	13500	11000	10900	11000	10500	10400	10500	---	---	---
13	13500	13200	13300	11100	10700	10900	11200	10500	10900	---	---	---
14	13400	13200	13300	11800	11200	11700	11900	11100	11500	---	---	---
15	13300	13100	13200	11900	11800	11800	11800	11700	11800	---	---	---
16	13300	13200	13200	12100	11800	12000	11700	11500	11600	---	---	---
17	13300	13200	13300	13000	12100	12700	11600	11400	11500	---	---	---
18	13400	13100	13300	12800	12600	12700	11500	11300	11400	---	---	---
19	13600	13200	13400	12700	12600	12700	11400	11200	11300	---	---	---
20	13700	13200	13500	12800	12400	12500	11300	11100	11200	---	---	---
21	---	---	---	12400	12000	12300	11200	11000	11100	---	---	---
22	13800	13200	13500	12200	12000	12200	11300	11000	11100	---	---	---
23	13500	13100	13300	12200	12000	12100	11400	11100	11300	---	---	---
24	13400	13000	13200	12000	11800	12000	11700	11300	11500	---	---	1540
25	13300	12900	13100	12000	11900	12000	---	---	---	8700	800	2020
26	13200	12800	13000	12000	11800	11900	---	---	---	3100	1200	2200
27	13000	12600	12800	11900	11700	11800	---	---	---	3600	1500	2590
28	12800	12500	12700	11900	11600	11700	---	---	---	5100	3600	4430
29	---	---	---	11700	11600	11700	---	---	---	6200	5100	5540
30	---	---	---	11800	11500	11600	11600	10300	11000	4300	800	1820
31	---	---	---	11700	11400	11600	---	---	---	1100	900	992
MONTH	13800	11600	12900	13000	10700	11900	11900	10300	11200	10700	800	5270

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1400	1100	1210	---	---	7660	---	---	---	2400	1900	2190
2	3900	900	2080	---	---	7930	---	---	---	14700	1800	7910
3	4200	600	1940	---	---	8240	---	---	---	15300	4400	6690
4	7100	4400	5930	---	---	8520	---	---	---	4600	3900	4130
5	7100	6200	6440	---	---	8800	---	---	---	4900	4600	4780
6	6400	5300	6110	---	---	9030	---	---	---	7300	4600	6270
7	6100	5800	5970	---	---	9340	---	---	---	7400	7200	7280
8	5800	4800	5480	---	---	9660	---	---	---	9300	7300	8420
9	5900	5400	5660	---	---	9890	---	---	---	7000	4400	4740
10	6200	5900	6000	---	---	10200	---	---	---	---	---	4450
11	6500	6100	6230	---	---	10400	---	---	---	---	---	4610
12	---	---	6360	---	---	10700	---	---	---	---	---	5070
13	---	---	6420	---	---	11100	---	---	---	---	---	5540
14	---	---	6980	---	---	11300	---	---	---	---	---	6000
15	---	---	7240	---	---	11600	---	---	---	---	---	6430
16	---	---	7630	---	---	11900	---	---	---	---	---	6910
17	---	---	8010	---	---	12100	---	---	---	---	---	7390
18	---	---	8550	---	---	12400	---	---	---	---	---	7840
19	---	---	8880	---	---	12600	---	---	---	---	---	8300
20	---	---	9140	---	---	13000	---	---	---	---	---	8780
21	---	---	6640	13200	13100	13200	---	---	---	---	---	9250
22	5300	900	2960	13200	12900	13000	---	---	---	---	---	9750
23	5900	3100	4680	13300	12900	13000	---	---	---	---	---	10200
24	9900	3400	5980	---	---	---	---	---	---	---	---	10600
25	---	---	6220	---	---	---	---	---	9820	11300	11100	11200
26	---	---	6570	---	---	---	12300	8900	10600	11600	11300	11400
27	---	---	6710	---	---	---	11100	5900	10400	11700	11400	11600
28	---	---	7040	---	---	---	14700	800	4380	11800	11500	11600
29	---	---	7290	---	---	---	10700	7100	9750	11900	11600	11800
30	---	---	7410	---	---	---	---	---	9050	11900	11400	11700
31	---	---	---	---	---	---	3200	1100	1930	---	---	---
MONTH	9900	600	6130	13300	12900	10700	14700	800	7990	15300	1800	7760

08123720 BEALS CREEK NEAR COAHOMA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	16.0	12.0	14.0	14.0	11.0	12.5	11.0	5.0	8.0	11.0	5.5	7.5
2	17.0	12.0	14.5	15.0	9.0	11.5	4.5	1.5	2.5	10.0	4.5	6.5
3	23.0	12.5	17.5	15.0	7.5	11.0	7.0	1.0	4.0	8.5	2.5	6.0
4	21.0	14.5	17.0	16.0	8.0	11.5	10.0	3.5	6.5	8.5	4.5	6.5
5	20.0	12.0	15.5	16.0	9.0	12.5	10.0	3.0	5.5	6.0	2.0	4.5
6	22.5	12.0	16.5	17.0	10.5	12.5	8.5	3.0	6.0	9.5	2.5	5.5
7	22.5	14.5	18.0	15.0	8.5	11.5	12.5	5.5	8.0	5.5	1.0	2.5
8	25.5	17.0	20.5	17.5	8.5	13.0	12.0	4.5	7.5	4.5	.0	1.5
9	22.5	20.0	20.5	18.0	13.0	15.5	12.0	8.0	9.0	5.0	.0	2.0
10	21.0	19.0	20.0	16.5	12.0	14.5	10.0	3.5	6.5	6.5	.5	3.0
11	25.5	17.5	21.5	12.0	9.5	10.0	3.5	1.0	2.0	9.0	1.5	4.5
12	27.0	20.0	23.0	17.0	9.5	13.0	1.0	.0	.5	9.0	2.0	5.0
13	26.0	20.0	23.0	20.0	16.0	17.5	1.5	.0	1.0	10.0	2.0	5.5
14	23.0	17.0	20.0	21.5	15.0	17.5	3.0	.0	1.5	10.0	3.5	6.5
15	22.5	15.0	18.5	15.0	10.0	12.5	4.0	.0	2.0	14.0	5.5	9.0
16	21.0	15.5	18.0	12.5	8.0	10.0	4.0	.0	1.5	13.5	8.5	10.0
17	18.0	17.0	17.5	15.5	9.0	12.0	5.5	.0	2.5	15.0	6.5	10.0
18	20.5	17.0	18.5	18.0	13.0	14.5	3.5	.5	1.5	13.0	7.0	9.5
19	21.0	16.0	18.5	14.0	8.0	12.0	5.5	.0	2.5	14.0	6.0	9.5
20	19.5	16.0	17.5	10.0	5.5	7.5	7.0	.0	3.0	15.5	7.5	10.5
21	20.5	17.0	18.5	11.0	7.0	8.5	9.0	.5	4.0	15.0	9.0	11.5
22	24.0	17.0	19.5	12.5	7.0	9.5	9.5	3.5	6.0	12.0	7.0	9.0
23	24.0	17.0	20.0	15.5	8.5	11.5	9.0	2.5	5.5	13.0	4.0	8.0
24	23.0	15.5	19.0	13.0	9.0	10.5	8.0	3.0	5.0	13.5	7.5	9.5
25	19.5	15.5	17.5	17.5	11.0	14.0	6.0	1.0	3.5	11.5	6.0	8.5
26	21.0	17.0	18.5	18.0	14.5	15.5	8.5	1.0	4.0	12.0	4.0	7.0
27	22.0	15.0	18.0	14.5	10.5	12.5	7.0	1.5	4.0	11.0	2.0	6.0
28	21.0	15.5	17.5	14.0	10.0	11.0	9.5	2.5	5.0	13.5	4.5	8.5
29	19.5	13.5	16.0	15.0	9.5	12.0	8.0	2.5	4.5	12.0	6.5	9.0
30	18.5	12.5	15.0	15.5	11.5	12.5	10.5	4.0	7.0	15.5	5.5	9.5
31	18.0	10.5	14.0	---	---	---	9.5	5.0	7.0	19.0	9.5	13.5
MONTH	27.0	10.5	18.0	21.5	5.5	12.5	12.5	.0	4.5	19.0	.0	7.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	18.5	12.5	15.0	18.0	8.5	13.0	22.5	17.0	19.5	26.0	17.0	21.0
2	16.0	14.0	15.0	20.0	10.0	14.0	25.0	17.0	20.5	---	---	---
3	17.0	13.5	15.0	18.0	12.0	14.0	24.0	16.5	19.5	25.5	18.0	21.5
4	17.5	9.5	13.0	21.5	9.5	14.5	24.5	13.5	18.5	24.5	18.5	21.0
5	13.0	11.0	12.0	19.5	10.5	14.5	28.0	15.0	21.0	25.0	18.5	21.5
6	15.5	8.0	11.0	20.5	9.0	14.0	28.0	19.5	23.0	---	---	---
7	14.5	8.5	11.0	19.5	10.5	14.5	28.0	21.0	24.0	---	---	---
8	8.0	5.5	6.5	21.0	10.0	15.0	25.5	19.5	22.5	---	---	---
9	5.5	2.5	4.0	19.0	14.0	16.0	19.0	14.5	16.0	---	---	---
10	8.0	1.0	4.0	20.5	11.0	15.5	20.0	13.5	16.0	---	---	---
11	8.0	1.0	4.0	21.0	12.5	16.0	25.0	15.5	19.5	---	---	---
12	5.0	2.0	3.0	19.0	9.5	14.0	27.5	18.0	22.0	---	---	---
13	12.5	1.5	6.5	18.0	10.0	14.0	25.0	18.5	21.5	---	---	---
14	13.0	7.0	9.5	15.5	10.5	13.0	24.5	16.0	19.0	---	---	---
15	17.5	7.5	12.0	19.5	10.0	14.5	23.0	13.0	17.5	---	---	---
16	14.5	11.0	12.5	21.5	9.5	15.5	22.0	14.0	17.5	---	---	---
17	17.5	10.0	13.0	21.0	11.5	15.5	24.0	15.5	19.5	---	---	---
18	16.5	10.5	14.0	18.5	10.5	14.0	25.0	15.5	20.0	---	---	---
19	20.0	12.0	15.5	19.5	9.5	13.5	22.0	16.0	18.5	---	---	---
20	19.5	11.0	14.5	17.0	8.5	12.5	22.5	13.5	17.5	---	---	---
21	---	---	---	21.5	7.5	14.0	22.5	14.0	18.0	---	---	---
22	17.5	5.5	10.5	21.5	9.5	15.0	22.5	14.5	18.5	---	---	---
23	16.0	7.0	11.5	24.0	10.5	16.5	22.5	15.5	18.5	---	---	---
24	20.0	8.5	13.0	23.5	13.0	17.5	25.5	16.5	20.5	35.5	17.5	26.0
25	18.5	9.5	14.0	21.5	13.0	17.0	---	---	---	21.5	17.0	18.5
26	23.0	11.0	16.0	26.0	14.0	19.5	---	---	---	21.0	17.5	19.0
27	17.0	11.0	13.5	26.5	15.5	20.5	---	---	---	23.0	19.0	20.5
28	17.5	10.5	13.5	27.0	16.0	20.5	---	---	---	25.0	19.0	21.5
29	---	---	---	23.0	16.0	19.5	---	---	---	25.0	21.5	22.5
30	---	---	---	27.5	16.5	21.0	22.5	19.5	20.5	22.0	19.5	20.0
31	---	---	---	27.5	17.0	21.5	---	---	---	21.0	20.5	20.5
MONTH	23.0	1.0	11.0	27.5	7.5	16.0	28.0	13.0	19.5	35.5	17.0	21.0

08123720 BEALS CREEK NEAR COAHOMA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.0	20.0	20.5	30.5	24.0	26.5	---	---	---	24.5	23.0	24.0
2	24.0	19.5	21.0	29.5	21.0	25.0	---	---	---	29.0	23.5	25.5
3	27.5	19.0	22.0	32.0	22.0	25.5	---	---	---	26.5	23.0	24.0
4	31.0	21.0	25.0	33.5	20.0	28.0	---	---	---	24.5	22.0	23.0
5	31.5	22.0	26.0	34.0	24.0	28.5	---	---	---	24.0	22.5	23.0
6	30.5	23.5	26.0	31.5	22.0	26.5	---	---	---	27.5	22.0	24.5
7	30.0	23.0	26.0	32.0	22.0	27.0	---	---	---	24.0	20.0	22.0
8	28.5	22.5	25.0	32.0	21.0	26.5	---	---	---	22.0	19.5	20.5
9	32.0	22.0	26.5	34.0	19.5	27.0	---	---	---	24.0	20.5	22.0
10	33.0	23.0	27.5	32.0	20.0	27.0	---	---	---	24.0	22.5	23.0
11	30.5	22.0	26.0	35.0	24.5	30.0	---	---	---	24.5	23.0	23.5
12	30.5	22.5	26.5	34.5	23.5	29.0	---	---	---	26.5	22.0	24.0
13	29.0	22.5	24.5	31.0	22.0	26.5	---	---	---	26.5	23.0	24.5
14	30.0	20.5	25.5	31.5	20.0	26.0	---	---	---	27.0	23.5	25.0
15	31.5	20.5	26.0	32.0	18.5	26.5	---	---	---	28.0	24.0	26.0
16	33.5	18.0	26.0	33.0	21.5	27.5	---	---	---	27.5	24.0	25.5
17	28.5	18.0	23.0	34.0	22.0	28.0	---	---	---	28.0	23.5	25.5
18	27.5	21.0	23.5	33.0	19.0	27.0	---	---	---	27.0	23.5	25.5
19	30.0	20.5	25.0	34.0	18.0	27.5	---	---	---	26.5	23.5	25.0
20	31.0	22.0	26.0	34.0	18.5	27.0	---	---	---	26.0	24.0	25.0
21	28.5	20.0	23.5	31.5	19.5	26.0	---	---	---	26.0	24.0	25.0
22	30.5	21.5	25.0	31.0	23.0	26.5	---	---	---	26.0	24.0	25.0
23	30.0	23.0	26.0	33.5	23.5	27.5	---	---	---	26.0	24.0	25.0
24	30.0	24.0	27.0	---	---	---	---	---	---	26.0	24.0	25.0
25	28.0	23.5	25.5	---	---	---	26.5	19.0	23.0	28.5	22.5	25.0
26	28.5	22.5	25.5	---	---	---	25.5	22.5	24.0	28.5	22.5	25.0
27	31.5	21.0	26.5	---	---	---	26.5	23.0	24.0	29.0	23.0	25.0
28	33.0	23.0	28.0	---	---	---	23.5	18.5	21.0	25.0	23.0	24.0
29	33.0	23.5	29.0	---	---	---	24.0	20.5	22.0	28.0	22.5	24.5
30	34.0	23.0	28.5	---	---	---	24.5	20.5	22.5	26.5	22.5	24.0
31	---	---	---	---	---	---	26.5	21.0	23.0	---	---	---
MONTH	34.0	18.0	25.5	35.0	18.0	27.0	26.5	18.5	23.0	29.0	19.5	24.5

08123800 BEALS CREEK NEAR WESTBROOK, TX

LOCATION.--Lat 32°11'57", long 101°00'49", Mitchell County, Hydrologic Unit 12080007, on left bank at downstream side of bridge on State Highway 163, 2.1 mi downstream from Hackberry Creek, 10.8 mi south of Westbrook, 15.7 mi southwest of Colorado City, and 19.1 mi upstream from mouth.

DRAINAGE AREA.--9,802 mi², of which 7,814 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to current year.

REVISED RECORDS.--WDR TX-72-1: 1971. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,048.74 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharge: Oct. 10, 17 and June 27 to July 21. Records good except those for estimated daily discharges, which are fair. Low flow is affected by diversion upstream from station.

AVERAGE DISCHARGE.--28 years, 24.6 ft³/s (17,820 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,780 ft³/s May 19, 1961 (gage height, 21.65 ft); maximum gage height, 21.94 ft Sept. 29, 1980; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1908, about 24.5 ft in 1922, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 18	1400	1,160	10.41	June 7	0500	1,130	10.78
May 25	0930	1,230	11.24	Sept. 1	1615	1,620	12.90
May 27	0045	1,070	10.46	Sept. 6	0815	1,440	12.20
June 3	1300	*1,680	*13.16				

Minimum daily discharge, 0.03 ft³/s May 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	.76	.14	.13	.12	.10	.08	.05	162	3.4	.35	1210
2	4.9	.69	.14	.13	.15	.10	.09	.05	291	3.3	.50	666
3	3.5	.59	.12	.12	.21	.10	.10	.07	1050	3.1	1.6	195
4	2.8	.55	.13	.13	.17	.10	.08	.06	471	2.9	.56	669
5	2.4	.52	.14	.12	.27	.10	.09	.06	134	2.8	.46	989
6	2.1	.43	.14	.12	.22	.10	.10	.05	364	2.6	.42	1170
7	1.9	.40	.13	.12	.15	.10	.10	.04	608	2.4	.42	714
8	1.9	.40	.13	.12	.09	.10	.08	.04	244	2.3	.40	223
9	2.0	.38	.14	.12	.08	.11	.07	.04	208	2.0	.42	202
10	203	.35	.13	.12	.08	.10	.10	.04	93	1.8	.73	333
11	35	.34	.12	.12	.08	.10	.08	.04	51	1.5	1.1	662
12	12	.33	.13	.12	.10	.08	.08	.04	34	1.2	.50	638
13	4.6	.33	.14	.12	.12	.11	.08	.03	21	1.1	.44	532
14	3.2	.32	.12	.12	.13	.13	.06	.04	14	.89	.43	487
15	7.3	2.8	.12	.13	.12	.12	.04	.04	9.9	.79	.45	489
16	6.6	1.5	.10	.12	.12	.11	.05	.04	8.5	.79	.47	410
17	92	.90	.10	.12	.11	.11	.05	.04	14	.79	.47	399
18	852	.63	.10	.12	.10	.11	.05	.06	81	.62	.47	344
19	49	.43	.11	.12	.10	.10	.10	.07	226	.54	.46	304
20	17	.36	.11	.14	.11	.10	.10	.08	9.8	.47	.48	271
21	5.1	.34	.10	.13	.10	.13	.07	.07	20	.47	.56	244
22	3.0	.30	.13	.11	.11	.14	.06	.06	387	.45	.62	226
23	2.1	.29	.11	.10	.11	.13	.05	.08	192	.43	.65	212
24	1.7	.27	.12	.11	.11	.13	.05	.10	107	.39	.67	197
25	1.4	.22	.12	.12	.12	.12	.07	566	26	.35	20	180
26	1.3	.20	.11	.14	.13	.12	.09	598	15	.35	81	168
27	1.0	.18	.12	.12	.12	.12	.09	664	9.1	.35	53	152
28	.79	.20	.11	.12	.11	.12	.05	215	5.7	.34	46	137
29	.75	.21	.10	.11	---	.10	.05	63	4.3	.33	87	125
30	.70	.17	.10	.10	---	.10	.05	354	3.6	.33	78	116
31	.75	---	.12	.11	---	.10	---	307	---	.34	325	---
TOTAL	1334.79	15.39	3.73	3.73	3.54	3.39	2.21	2768.29	4863.9	39.42	703.63	12664
MEAN	43.1	.51	.12	.12	.13	.11	.07	89.3	162	1.27	22.7	422
MAX	852	2.8	.14	.14	.27	.14	.10	664	1050	3.4	325	1210
MIN	.70	.17	.10	.10	.08	.08	.04	.03	3.6	.33	.35	116
AC-FT	2650	31	7.4	7.4	7.0	6.7	4.4	5490	9650	78	1400	25120

CAL YR 1985 TOTAL 6639.92 MEAN 18.2 MAX 852 MIN .10 AC-FT 13170
WTR YR 1986 TOTAL 22406.02 MEAN 61.4 MAX 1210 MIN .03 AC-FT 44440

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1958 to current year. Chemical and biochemical analyses: October 1974 to October 1977. Sediment analyses: October 1974 to October 1977.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1958 to current year.
WATER TEMPERATURES: November 1958 to current year.

INSTRUMENTATION.--Beginning Mar. 5, 1981, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 22,800 microsiemens June 2, 1969; minimum daily, 180 microsiemens May 25, 1986.
WATER TEMPERATURES: Maximum daily, 37.0°C June 28, 1960, and July 3, 1976; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 13,700 microsiemens Aug. 25; minimum daily, 180 microsiemens May 25.
WATER TEMPERATURES: Maximum daily, 35.0°C Aug. 19; minimum daily 1.0°C Dec. 13, 14, Jan. 7, 8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 28...	0920	0.78	5600	18.0	1200	980	240	150	820
DEC 09...	0855	0.15	6130	9.5	1300	980	270	150	880
JAN 21...	0930	0.13	6620	9.5	1500	1200	280	200	970
FEB 24...	1605	0.11	7320	18.0	1600	1400	280	230	1000
MAY 27...	1640	469	1610	22.0	360	260	83	36	180
JUN 02...	1030	192	990	15.0	200	130	48	20	110

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 28...	10	21	238	710	1400	0.6	5.7	3500	--
DEC 09...	11	11	313	730	1600	0.8	8.5	3800	5.4
JAN 21...	11	9.3	308	790	1800	0.8	5.5	4200	--
FEB 24...	11	12	249	860	2000	0.8	2.4	4500	--
MAY 27...	4	10	93	210	330	0.5	9.3	910	--
JUN 02...	3	5.2	71	110	180	0.2	7.1	520	--

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	1334.79	2770	1730	6230	680	2440	400	1420	610
NOV. 1985	15.39	6120	3940	164	1600	65	920	38	1300
DEC. 1985	3.73	6290	4060	41	1600	16	950	9.6	1400
JAN. 1986	3.73	6630	4280	43	1700	17	1000	10	1500
FEB. 1986	3.54	6710	4340	42	1700	17	1000	9.8	1500
MAR. 1986	3.39	6490	4190	38	1700	15	980	9.0	1400
APR. 1986	2.21	6650	4300	26	1700	10	1000	6.0	1500
MAY 1986	2768.29	1360	840	6280	330	2440	190	1420	300
JUNE 1986	4863.9	2070	1300	17000	510	6680	300	3900	450
JULY 1986	39.42	7880	5150	548	2100	219	1200	130	1700
AUG. 1986	703.63	2620	1650	3130	650	1230	380	717	570
SEPT 1986	12664	6140	4030	138000	1600	55100	960	32800	1400
TOTAL	22406.02	**	**	171000	**	68300	**	40400	**
WTD.AVG.	61	4360	2830	**	1100	**	670	**	960

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	2160	2120	2140	5960	5840	5890	6300	6160	6220	6500	6280	6410
2	2220	2160	2180	6040	5940	5990	6160	6000	6070	6800	6400	6530
3	2260	2200	2220	6100	5980	6040	6320	6020	6160	6800	6580	6690
4	2320	2240	2280	6220	6100	6170	6400	6300	6350	6780	6500	6630
5	2380	2320	2340	6280	6200	6250	6240	5940	6050	6740	6600	6680
6	2440	2380	2400	6360	6240	6290	6480	5980	6170	6840	6580	6710
7	2500	2440	2460	6420	6300	6340	6220	6000	6110	7040	6700	6920
8	2560	2480	2520	6400	6260	6350	6180	5940	6060	6980	6520	6750
9	2620	2540	2590	6380	6300	6340	6340	6020	6240	6980	6600	6760
10	2680	2620	2660	6480	6280	6380	6420	6260	6350	6940	6480	6720
11	2700	2660	2690	6580	6460	6530	6460	6300	6370	6700	6340	6530
12	2720	2680	2690	6580	6460	6550	6620	6320	6470	6580	6280	6430
13	2720	2680	2690	6600	6460	6550	6720	6360	6530	6640	6220	6500
14	2740	2680	2710	6460	6300	6380	6520	6160	6370	6500	6260	6390
15	2780	2720	2750	7340	5780	6730	6380	6020	6180	6700	6300	6530
16	2840	2780	2800	6260	5720	5890	6380	6020	6160	6500	6340	6410
17	2920	2820	2880	6020	5660	5820	6340	5940	6160	6400	6280	6340
18	2960	2400	2770	5660	5600	5630	6320	6080	6200	6500	6280	6390
19	2540	2420	2500	5620	5500	5560	6400	6060	6250	6460	6300	6400
20	3160	2560	2920	5640	5500	5570	6380	6180	6270	6600	6280	6460
21	4080	3160	3650	5640	5560	5610	6380	6060	6270	6860	6500	6720
22	5080	4120	4730	5640	5460	5560	6340	6220	6280	6880	6800	6850
23	5180	5020	5080	5500	5400	5440	6780	6180	6390	6920	6680	6850
24	5340	5160	5240	5520	5420	5460	6320	6200	6250	7000	6740	6840
25	5420	5340	5370	5620	5400	5520	6340	6220	6300	7020	6840	6930
26	5540	5420	5470	5820	5600	5670	6820	6360	6580	7040	6660	6830
27	5620	5520	5570	5740	5640	5670	6680	6520	6620	6860	6620	6730
28	5700	5560	5640	5980	5700	5800	6640	6260	6410	6960	6620	6800
29	5780	5680	5730	6080	5940	6010	6520	6300	6410	6800	6620	6690
30	5860	5780	5820	6280	5940	6110	6820	6380	6570	6640	6340	6530
31	5920	5840	5890	---	---	---	6500	6340	6420	6660	6230	6510
MONTH	5920	2120	3530	7340	5400	6000	6820	5940	6300	7040	6220	6630

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6760	6440	6680	6840	6720	6800	6500	6320	6420	6880	6740	6810
2	6880	6520	6700	6800	6580	6710	6560	6380	6470	6860	6780	6810
3	6680	6360	6600	6920	6720	6810	6580	6460	6530	6880	6800	6830
4	6740	6600	6660	6960	6780	6900	6660	6540	6600	6900	6800	6840
5	6640	6340	6470	7020	6880	6960	6660	6500	6600	6920	6820	6880
6	6460	6180	6310	6980	6760	6880	6600	6460	6530	7060	6880	6980
7	6460	6200	6330	6880	6700	6840	6580	6380	6520	7120	7000	7070
8	6460	6140	6240	6840	6660	6750	6640	6480	6580	7200	7060	7130
9	6160	6080	6100	6780	6620	6740	6660	6480	6570	7200	7140	7170
10	6260	6040	6140	6760	6540	6630	6500	6360	6430	7220	7140	7180
11	6400	6100	6230	6700	6500	6610	6520	6280	6400	7300	7140	7220
12	6380	6120	6310	6720	6560	6620	6480	6320	6400	7360	7180	7270
13	6620	6200	6450	6580	6400	6500	6580	6340	6480	7420	7280	7350
14	6480	6380	6430	6500	6320	6410	6960	6540	6790	7460	7280	7380
15	6620	6260	6510	6500	6320	6400	7000	6920	6960	7580	7380	7490
16	6780	6620	6710	6540	6280	6380	6960	6880	6940	7580	7460	7530
17	6940	6700	6800	6520	6360	6480	6940	6880	6920	7580	7520	7560
18	7020	6920	6990	6500	6300	6390	6940	6880	6910	7620	7440	7570
19	7220	6980	7090	6420	6200	6340	6900	6640	6710	7620	7440	7550
20	7360	7100	7230	6380	6160	6270	6700	6560	6620	7640	7460	7550
21	7420	7280	7370	6320	6060	6230	6760	6620	6710	7780	7460	7640
22	7440	7300	7370	6480	6200	6350	6860	6720	6800	7900	7720	7800
23	7460	7340	7390	6460	6180	6350	6960	6820	6910	7960	7780	7860
24	7380	7200	7290	6440	6280	6370	7000	6920	6960	7980	6340	7820
25	7300	7080	7210	6420	6260	6330	7040	6900	6970	5780	180	1320
26	7200	6900	7090	6380	6160	6240	6980	6580	6880	1840	520	814
27	7300	6860	6990	6220	6020	6160	6700	6500	6610	1900	800	1400
28	6880	6740	6810	6280	6140	6210	6760	6600	6720	2900	1540	2080
29	---	---	---	6280	6200	6240	6860	6660	6780	3200	1260	2810
30	---	---	---	6340	6220	6280	6860	6760	6800	3200	480	1390
31	---	---	---	6440	6300	6360	---	---	---	2200	1040	1530
MONTH	7460	6040	6730	7020	6020	6500	7040	6280	6680	7980	180	6020

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2200	340	1670	7720	7540	7620	7620	7440	7530	1040	840	924
2	2240	360	958	7780	7640	7720	7540	6760	7280	3840	1100	2340
3	1160	400	743	7900	7700	7790	7100	6220	6680	6760	4020	5300
4	1460	800	1120	7940	7780	7850	9460	7160	8530	6140	1680	3060
5	4460	1540	2870	7980	7800	7890	9980	9260	9650	2600	2080	2320
6	6280	920	3770	8020	7800	7900	10100	9760	9850	2680	1440	1940
7	4060	760	2160	8080	7760	7950	9760	9400	9660	5360	1920	3330
8	5680	1660	4030	8200	7960	8080	9380	8860	9180	7080	5540	6480
9	5220	1680	3330	8180	8000	8100	8820	8360	8650	8380	7100	7480
10	5060	3060	4270	8080	7920	8010	8720	6860	7920	8980	8480	8780
11	5800	5120	5550	7960	7800	7900	6920	6040	6320	9300	9000	9140
12	6180	5800	6000	7920	7720	7830	6900	6040	6490	9420	9200	9360
13	6460	6180	6320	7980	7780	7890	7900	6860	7310	9160	8520	8840
14	6580	6360	6470	8100	7720	7930	8700	7920	8350	8480	7420	8290
15	6820	6560	6680	8300	8020	8190	8760	8420	8670	8060	7160	7720
16	7080	5660	6760	8260	8140	8200	8380	7740	8120	8360	7540	8040
17	6420	3860	5570	8200	7980	8110	7700	7240	7490	8380	7660	8010
18	6180	800	4570	8060	7900	7990	7200	7000	7110	9020	8400	8670
19	2080	540	995	7920	7800	7850	7000	6880	6950	9640	9040	9380
20	1320	760	1010	7800	7600	7680	7020	6820	6910	10000	9660	9860
21	1820	480	1490	7860	7600	7730	6920	6740	6840	10300	10000	10200
22	1860	420	959	7820	7640	7760	6860	6660	6740	10600	10200	10400
23	7800	1300	2430	7920	7740	7820	6700	6500	6610	10900	10600	10700
24	4600	2220	3360	7940	7720	7830	6560	6400	6490	11200	10900	11000
25	4320	3760	4050	8020	7760	7900	13700	1660	6190	11500	11200	11300
26	4960	3740	4180	8000	7820	7900	1400	1100	1320	11700	11000	11500
27	6340	5040	5770	7940	7760	7840	8000	1820	3490	11900	11400	11800
28	7160	6400	6840	7860	7680	7770	6080	2260	4940	12000	11900	12000
29	7420	7140	7280	7780	7620	7690	3760	780	1550	12200	12000	12100
30	7640	7340	7490	7740	7540	7630	3800	3260	3390	12300	12100	12200
31	---	---	---	7660	7480	7560	6900	660	2150	---	---	---
MONTH	7800	340	3960	8300	7480	7870	13700	660	6720	12300	840	8080

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.5	15.5	16.0	16.0	12.5	14.0	11.5	6.5	9.0	10.5	6.5	8.0
2	16.5	15.5	16.0	15.5	11.0	13.0	6.0	3.0	4.0	10.5	5.5	7.5
3	18.5	15.5	17.0	15.5	10.5	12.5	8.0	2.5	5.0	9.0	3.5	6.5
4	18.5	17.0	18.0	16.0	10.5	13.0	10.5	4.5	7.5	9.5	5.5	7.5
5	18.0	15.5	17.0	16.0	11.5	13.5	10.0	4.0	7.0	7.0	3.0	5.5
6	18.5	15.5	17.0	16.0	12.0	14.0	9.5	4.0	7.0	9.0	4.0	6.0
7	20.0	16.5	18.0	16.0	11.0	13.0	10.5	6.5	8.5	6.5	1.0	3.0
8	20.5	18.5	19.5	17.0	10.5	14.0	11.5	5.5	8.5	4.5	1.0	2.5
9	21.0	20.0	20.5	18.5	14.5	16.5	14.0	9.0	11.0	7.0	2.5	4.5
10	20.5	20.5	20.5	17.5	13.5	16.0	11.5	5.5	8.0	8.0	2.5	5.0
11	21.5	20.0	20.5	13.0	11.5	12.0	5.0	3.0	4.0	9.0	3.0	6.0
12	22.5	21.0	21.5	17.5	11.5	14.5	3.0	2.0	2.5	9.5	3.0	6.0
13	22.5	21.5	22.0	20.0	16.5	18.0	3.0	1.0	2.0	9.0	3.5	6.5
14	22.5	20.0	21.5	20.0	16.0	18.0	5.5	1.0	3.0	9.5	4.0	7.0
15	20.5	19.0	19.5	15.5	12.5	14.0	8.0	3.0	5.0	11.5	5.5	8.5
16	20.0	19.0	19.5	13.5	10.0	12.0	6.0	3.0	4.5	11.0	8.0	9.5
17	20.0	19.0	19.5	16.0	11.0	13.5	8.5	3.5	5.5	12.0	6.0	9.5
18	19.0	18.0	18.5	18.0	14.5	16.0	4.5	2.0	3.5	12.5	6.5	9.5
19	20.0	18.0	19.0	15.5	11.0	14.0	8.0	2.0	4.5	12.5	6.0	9.0
20	20.0	19.0	19.5	11.5	9.0	10.0	8.0	3.5	5.5	12.5	6.5	10.0
21	20.0	19.0	19.5	11.5	8.5	10.0	9.0	3.0	6.0	12.5	8.5	10.0
22	21.5	19.0	20.0	13.0	8.0	10.5	10.0	4.5	7.0	10.5	7.0	8.5
23	22.5	20.0	21.0	15.0	9.5	12.0	10.0	4.0	7.0	10.5	5.0	8.0
24	21.5	19.0	20.5	13.5	10.0	11.5	9.0	5.0	6.5	11.5	7.5	9.5
25	20.5	19.5	20.0	16.5	11.5	13.5	8.0	2.5	5.0	10.0	6.5	8.5
26	20.5	19.0	19.5	17.0	15.0	16.0	8.5	3.0	5.5	8.5	5.0	7.0
27	21.0	18.5	19.5	15.0	11.5	12.5	8.5	3.0	5.5	9.0	4.0	6.5
28	20.5	18.5	19.0	14.0	10.5	12.0	9.0	4.0	6.5	10.5	5.0	8.0
29	20.0	16.5	17.5	15.0	10.0	12.0	9.0	3.5	6.0	11.0	6.5	8.5
30	19.0	15.0	16.5	15.5	12.0	13.5	11.0	5.5	8.5	12.0	6.0	9.0
31	18.5	13.5	16.0	---	---	---	10.0	5.5	8.0	14.5	10.0	12.0
MONTH	22.5	13.5	19.0	20.0	8.0	13.5	14.0	1.0	6.0	14.5	1.0	7.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	15.5	12.0	13.5	16.0	11.0	13.5	21.0	18.0	20.0	23.0	20.0	21.5
2	14.0	13.0	13.5	17.0	11.5	14.5	22.0	18.0	19.5	22.5	19.5	21.0
3	15.0	13.0	13.5	17.0	13.5	15.0	22.0	17.5	19.5	21.5	19.5	20.5
4	15.0	10.5	12.5	17.0	11.5	14.5	21.5	15.5	18.5	22.0	19.5	20.5
5	13.0	11.0	12.0	17.5	12.0	14.5	22.5	16.0	19.0	23.0	20.0	21.5
6	13.0	9.5	11.0	18.0	11.5	14.5	24.0	19.0	21.0	24.0	21.0	22.5
7	14.0	9.0	11.0	16.5	12.5	14.5	25.0	20.5	22.5	24.0	22.0	23.0
8	9.0	5.5	7.0	17.5	12.0	15.0	24.0	20.5	22.0	24.0	21.5	22.5
9	5.5	3.5	4.5	18.5	15.0	16.5	20.0	16.5	17.5	22.0	19.5	20.5
10	6.5	2.5	4.0	18.0	14.0	16.0	18.0	15.5	16.5	23.0	20.0	21.5
11	7.5	3.0	4.5	17.5	14.5	16.0	21.0	16.0	18.5	23.5	19.0	21.5
12	5.0	2.5	3.5	17.0	12.5	15.0	23.5	18.0	20.5	23.5	21.0	22.0
13	10.0	3.5	6.5	15.5	12.5	14.0	23.5	18.5	21.0	24.5	21.5	23.0
14	11.5	6.5	9.0	15.5	11.5	13.5	22.5	17.5	19.5	24.5	23.0	23.5
15	14.0	7.5	10.0	17.5	12.0	14.5	21.0	14.5	17.5	25.0	22.0	23.5
16	13.0	10.5	12.0	19.0	11.5	15.0	21.0	15.0	18.0	23.5	22.5	23.0
17	15.0	10.5	12.5	17.5	13.5	15.5	23.5	17.0	20.0	22.5	18.0	20.5
18	14.5	11.0	13.0	17.5	13.5	15.5	23.5	17.0	20.5	20.5	16.5	18.5
19	17.5	12.0	14.5	16.0	11.5	13.5	20.0	16.5	18.5	21.5	17.5	19.5
20	17.5	12.5	14.5	15.0	10.0	12.5	21.5	14.5	17.5	22.0	19.0	20.5
21	12.5	9.5	11.0	16.5	9.0	13.0	22.0	15.5	18.5	23.0	19.5	21.5
22	13.0	8.0	10.5	18.5	11.5	14.5	22.5	16.0	19.0	24.0	20.5	22.0
23	14.0	9.0	11.5	20.0	12.5	16.0	22.0	17.0	19.5	25.0	22.0	23.5
24	15.0	10.5	12.5	20.5	14.0	17.0	25.0	18.5	21.5	25.5	23.0	24.0
25	16.5	10.5	13.5	20.0	14.5	17.0	23.0	19.0	21.0	23.5	17.5	20.0
26	17.0	11.5	14.5	22.5	15.5	18.5	22.5	19.5	21.0	20.5	19.0	19.5
27	15.5	12.5	14.0	22.5	16.5	19.0	21.0	19.0	20.5	22.5	19.5	21.0
28	16.0	12.0	14.0	23.5	16.5	19.5	22.0	17.5	19.5	24.5	20.0	22.0
29	---	---	---	21.0	17.0	19.0	23.5	19.5	21.5	25.0	20.0	23.0
30	---	---	---	24.0	16.5	20.0	23.0	20.5	21.5	20.5	18.5	19.5
31	---	---	---	24.5	18.0	20.5	---	---	---	21.5	19.0	20.0
MONTH	17.5	2.5	11.0	24.5	9.0	15.5	25.0	14.5	19.5	25.5	16.5	21.5

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	24.0	17.0	20.5	29.5	26.5	28.0	34.0	25.5	29.5	25.0	23.5	24.0
2	19.0	13.0	17.0	28.0	25.5	27.0	32.5	26.0	28.5	26.0	24.0	25.0
3	23.0	19.0	21.0	31.0	24.5	27.5	30.0	25.0	27.0	25.5	24.0	24.5
4	26.5	21.5	24.0	32.0	24.5	28.0	32.0	25.0	28.0	23.5	22.0	23.0
5	27.5	24.0	25.5	32.0	24.5	28.0	33.5	25.5	29.0	24.0	21.5	23.0
6	27.0	21.5	25.0	30.5	25.5	28.0	34.0	26.0	29.5	24.5	22.0	23.5
7	27.0	22.5	25.0	30.0	25.0	27.5	33.0	25.5	29.0	24.0	22.5	23.5
8	26.5	22.0	24.5	31.0	24.5	27.5	31.5	26.5	28.5	22.0	20.5	21.0
9	28.0	23.0	25.5	31.5	24.5	27.5	32.5	25.0	28.0	23.0	19.5	21.5
10	30.0	25.0	27.5	30.5	24.5	27.5	29.0	25.0	26.5	26.0	22.0	24.0
11	29.5	25.5	27.5	32.0	25.0	28.0	32.0	25.5	28.0	27.0	24.5	25.5
12	30.5	25.0	28.0	31.5	25.0	28.0	33.0	25.5	29.0	26.5	24.0	25.0
13	31.5	25.5	28.5	30.5	24.5	27.5	32.0	26.5	29.0	26.5	23.5	25.0
14	31.5	26.0	29.0	30.0	24.0	27.0	32.5	25.5	28.5	27.0	24.5	25.5
15	31.0	25.5	28.5	31.0	23.5	27.0	29.5	26.5	27.5	28.0	25.0	26.5
16	32.5	26.0	28.0	30.5	24.0	27.0	33.5	25.5	29.0	28.0	25.5	26.5
17	29.0	24.0	26.5	31.5	24.0	27.5	34.0	26.5	29.5	28.5	25.0	26.5
18	28.5	24.0	26.0	31.5	24.0	27.5	34.5	26.5	30.0	28.5	25.5	27.0
19	29.0	23.0	25.5	32.0	24.0	28.0	35.0	26.5	30.5	28.0	25.0	26.5
20	30.5	24.5	27.5	31.5	24.5	28.0	33.5	26.0	29.5	27.5	25.0	26.0
21	29.0	24.0	26.5	31.5	25.0	28.0	31.0	26.5	28.0	27.0	24.5	25.5
22	27.0	23.5	25.0	29.5	24.5	26.5	31.5	26.0	28.0	28.0	24.5	26.0
23	28.5	25.5	27.0	32.5	25.0	28.5	28.0	25.0	26.5	28.0	25.0	26.5
24	29.0	25.5	27.0	33.5	25.0	29.0	27.5	23.5	25.5	27.5	25.0	26.0
25	29.5	26.0	27.5	33.5	26.0	29.5	27.0	23.5	25.0	27.0	24.0	25.5
26	31.0	25.0	28.0	34.0	26.5	30.0	26.0	22.5	24.5	27.0	24.0	25.5
27	32.0	26.0	29.0	33.5	26.0	29.5	25.5	23.5	24.5	27.0	24.5	26.0
28	33.5	27.0	30.0	34.0	25.5	29.5	24.0	22.0	23.0	26.0	24.5	25.0
29	33.5	27.5	30.5	33.5	25.5	29.5	23.0	21.5	22.5	25.5	24.0	24.5
30	33.0	27.0	29.5	33.5	26.0	29.5	24.0	21.5	23.0	24.5	23.5	24.0
31	---	---	---	33.5	25.5	29.0	23.5	23.0	23.5	---	---	---
MONTH	33.5	13.0	26.5	34.0	23.5	28.0	35.0	21.5	27.5	28.5	19.5	25.0

08123850 COLORADO RIVER ABOVE SILVER, TX
(National stream-quality accounting network)

LOCATION.--Lat 32°03'13", long 100°45'42", Coke County, Hydrologic Unit 12080008, on right bank 25 ft downstream from Pan American Oil Co. bridge, 4.7 mi west of Silver, and at mile 756.0.

DRAINAGE AREA.--14,910 mi², of which 10,260 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1967 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,907.66 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 4, 1972, water-stage recorder at site 0.5 mi downstream at same datum.

REMARKS.--Estimated daily discharges: Oct. 24-29, Nov. 3 to Dec. 3, June 19 to July 1, July 14-22, Aug. 31 to Sept. 10. Records good except those for estimated days, which are fair. For affects by upstream diversions, see stations 08121000 and 08123720. There is some regulation by Lake J. B. Thomas, Lake Colorado City, and by Champion Creek Reservoir (see stations 08118000, 08123000, and 08123600).

AVERAGE DISCHARGE.--19 years, 77.8 ft³/s (56,370 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 ft³/s Sept. 9, 1980 (gage height, 22.73 ft); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,530 ft³/s Sept. 6 at 1200 hours (gage height, 10.93 ft); no flow May 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	7.1	6.0	4.3	4.6	3.3	1.3	4.1	493	20	.19	1140
2	47	7.1	6.0	4.0	5.8	3.1	2.1	2.4	659	19	.15	1610
3	24	7.0	6.0	3.9	23	2.8	2.0	2.3	1240	19	.15	563
4	14	7.0	5.4	3.5	14	2.8	1.4	1.6	1220	16	.18	1630
5	9.3	7.0	5.0	3.6	11	2.3	1.4	.98	951	13	.99	2880
6	7.1	7.0	6.2	3.6	13	2.3	1.4	.53	1050	117	1.6	3450
7	5.7	7.0	6.2	2.9	11	2.3	1.4	1.1	2450	89	1.1	2670
8	4.9	7.0	6.1	2.8	8.8	2.9	.88	.66	1910	51	.51	1460
9	4.0	7.0	7.0	2.8	9.4	3.1	.84	.11	1190	37	.26	885
10	220	7.0	6.4	2.8	8.8	2.5	.95	.25	516	29	.15	641
11	418	7.0	5.3	3.3	8.8	2.5	.94	.15	229	26	6.0	757
12	105	6.5	5.0	3.7	7.6	2.0	.95	.14	175	23	6.7	882
13	53	6.5	5.0	3.7	7.6	1.9	.88	.11	141	19	2.6	734
14	55	6.5	5.0	3.7	6.6	2.6	.68	.06	98	14	1.1	633
15	53	6.5	5.0	3.7	6.6	2.8	.68	.05	72	10	.49	606
16	28	6.5	5.0	3.9	7.1	3.3	.79	.03	53	7.0	.39	540
17	26	6.5	5.0	3.7	5.6	3.1	1.2	.04	466	5.0	.30	504
18	514	6.5	4.8	3.5	5.6	2.1	.80	.03	288	4.8	.29	458
19	805	6.5	4.8	3.3	5.0	2.3	.67	.04	400	4.5	1.8	402
20	582	6.5	5.0	3.6	5.0	2.0	8.8	.04	500	4.4	2.8	354
21	409	6.5	5.0	3.5	4.6	2.0	15	.02	350	4.2	1.7	318
22	121	6.5	4.9	2.8	4.1	2.8	8.7	.02	200	4.0	.85	293
23	53	6.5	4.6	2.8	4.6	2.2	5.5	.01	90	3.7	.42	273
24	29	6.5	4.1	2.4	4.1	2.2	2.6	.00	55	2.7	.29	255
25	23	6.0	4.4	2.0	3.7	2.1	1.6	1190	40	1.9	6.0	237
26	17	6.0	3.8	2.0	3.3	1.7	25	594	30	1.4	30	221
27	14	6.0	3.7	2.4	2.6	2.0	9.5	866	25	.98	261	207
28	12	6.0	4.2	2.8	2.7	2.2	8.4	495	22	.62	594	198
29	9.4	6.0	4.6	3.3	---	2.1	8.5	187	21	.49	551	191
30	7.8	6.0	4.6	3.3	---	1.7	6.2	480	20	.37	282	176
31	7.1	---	4.1	4.6	---	2.2	---	463	---	.22	253	---
TOTAL	3767.3	197.7	158.2	102.2	204.6	75.2	121.06	4289.77	14954	548.28	2008.01	25168
MEAN	122	6.59	5.10	3.30	7.31	2.43	4.04	138	498	17.7	64.8	839
MAX	805	7.1	7.0	4.6	23	3.3	25	1190	2450	117	594	3450
MIN	4.0	6.0	3.7	2.0	2.6	1.7	.67	.00	20	.22	.15	176
AC-FT	7470	392	314	203	406	149	240	8510	29660	1090	3980	49920

CAL YR 1985 TOTAL 28553.67 MEAN 78.2 MAX 2140 MIN .00 AC-FT 56640
WTR YR 1986 TOTAL 51594.32 MEAN 141 MAX 3450 MIN .00 AC-FT 102300

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1967 to current year. Chemical and biochemical analyses: November 1977 to current year. Pesticide analyses: October 1970 to August 1981. Sediment analyses: August 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1967 to current year.
WATER TEMPERATURES: December 1967 to current year.

INSTRUMENTATION.--Beginning December 1967, specific conductance was recorded continuously. Beginning June 22, 1981, specific conductance and water temperature are recorded continuously at this station.

REMARKS..--Interruptions in the record were due to malfunctions of the instrument. Where maximum and minimum specfiic conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equatioins developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 17,300 microsiemens June 13, 1984; minimum daily, 180 microsiemens June 28, 1982.
WATER TEMPERATURES: Maximum daily, 35.5°C Aug. 2, 7, 1985; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 10,200 microsiemens Apr. 26, 27; minimum daily, 260 microsiemens June 8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT												
22...	1120	78	1040	7.70	22.0	320	14.4	177	0.6	840	500	180
DEC												
03...	1100	7.1	4870	8.10	4.0	10	12.6	--	0.9	K22	K12	1400
FEB												
04...	1120	13	5620	8.00	13.0	77	8.8	92	4.6	400	250	1500
APR												
29...	1100	6.6	9380	7.80	21.5	10	8.7	109	9.3	44	70	2400
JUN												
04...	1355	705	1200	--	24.5	--	--	--	--	--	--	230
17...	1100	796	3210	7.70	22.5	2300	8.1	101	4.3	2400	9700	690
AUG												
19...	1145	1.4	5690	7.70	29.5	25	5.9	--	3.0	42	34	1500

DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT												
22...	87	49	13	130	4	5.9	90	95	220	0.3	6.9	559
DEC												
03...	1200	340	130	630	8	8.9	144	1100	1100	0.5	4.8	3420
FEB												
04...	1400	360	150	750	9	8.3	146	1400	1200	0.4	1.2	4030
APR												
29...	2300	550	250	1400	13	14	87	2200	2300	0.6	2.9	7050
JUN												
04...	140	58	20	140	4	6.7	84	130	230	0.3	8.6	--
17...	600	130	89	440	7	16	91	500	710	0.4	4.6	2030
AUG												
19...	1400	390	130	740	9	13	66	1200	1300	0.5	8.7	3830

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
OCT												
22...	580	0.19	0.01	0.20	0.29	0.09	0.71	1.0	0.16	0.10	0.06	0.18
DEC												
03...	3400	--	<0.01	<0.10	0.11	0.12	0.39	0.5	0.03	0.01	0.01	0.03
FEB												
04...	4000	--	<0.01	<0.10	0.08	0.09	0.72	0.8	0.05	<0.01	<0.01	--
APR												
29...	6800	--	<0.01	0.76	0.31	0.27	1.3	1.6	0.09	0.02	<0.01	--
JUN												
04...	640	--	--	--	--	--	--	--	--	--	--	--
17...	1900	0.41	0.01	0.42	0.07	0.03	1.0	1.1	0.09	0.04	0.02	0.06
AUG												
19...	3800	--	<0.01	<0.10	0.12	0.13	1.6	1.7	0.10	<0.01	<0.01	--

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(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT												
22...	301	63	100	50	4	120	<0.5	<1	<1	<3	3	39
DEC												
03...	5	0.1	50	--	--	--	--	--	--	--	--	--
FEB												
04...	57	2.0	99	<10	1	100	<10	<1	<1	3	<1	40
APR												
29...	34	0.61	99	--	--	--	--	--	--	--	--	--
JUN												
04...	--	--	--	--	--	--	--	--	--	--	--	--
17...	5060	10900	99	<10	2	--	<10	<1	<1	<1	2	<10
AUG												
19...	41	0.15	86	--	--	--	--	--	--	--	--	--

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT											
22...	<1	19	5	<0.1	<10	3	<1	<1	650	8	10
DEC											
03...	--	--	--	--	--	--	--	--	--	--	--
FEB											
04...	<1	120	60	0.2	1	<1	1	<1	5000	21	10
APR											
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
17...	<5	80	<10	<0.1	22	9	<1	<1	1900	33	<10
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	3767.3	1140	718	7300	250	2540	190	1950	240
NOV. 1985	197.7	3010	1920	1030	680	365	520	277	650
DEC. 1985	158.2	5220	3380	1450	1200	522	920	393	1100
JAN. 1986	102.2	5680	3700	1020	1300	370	1000	278	1300
FEB. 1986	204.6	5910	3850	2130	1400	773	1100	581	1300
MAR. 1986	75.2	7090	4670	948	1700	348	1300	260	1600
APR. 1986	121.06	8800	5880	1920	2200	716	1600	532	2000
MAY 1986	4289.77	1310	824	9550	290	3330	220	2550	280
JUNE 1986	14954	1360	858	34700	300	12100	230	9260	290
JULY 1986	548.28	2750	1750	2590	620	916	470	696	590
AUG. 1986	2008.01	2900	1850	10000	660	3560	500	2700	630
SEPT 1986	25168	5520	3610	245000	1300	89300	990	67000	1200
TOTAL	51594.32	**	**	318000	**	115000	**	86500	**
WTD.AVG.	141	3510	2280	**	820	**	620	**	770

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued
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SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1440	880	1140	2680	2520	2600	5200	5000	5120			5310
2	1460	1360	1400	2840	2700	2760	5320	5220	5280			5340
3	1540	1440	1500	2980	2840	2910	5360	5260	5310			5400
4	1440	1380	1410	3100	2980	3040	5340	5260	5290			5470
5	1460	1380	1420	3260	3100	3190	5320	5220	5280			5450
6	1540	1460	1500	3380	3260	3320	5380	5300	5340			5490
7	1620	1540	1580	3500	3380	3440	5380	5300	5340			5560
8	1740	1640	1690	3560	3500	3530	5480	5380	5440			5630
9	1800	1740	1770	3660	3560	3610	5520	5440	5490			5660
10	2240	340	983	3820	3680	3750	5580	5500	5540			5700
11	2120	700	1210	3980	3840	3920	5620	5100	5300			5680
12	740	520	593	4020	3940	3990	5180	5120	5160			5630
13	1020	760	940	4080	4020	4040	5220	5140	5170			5660
14	1060	500	953	4160	4080	4100	5280	5040	5170			5680
15	1160	620	842	4360	1860	3210	5180	5060	5130			5700
16	1360	760	1040	3560	980	1950	5100	4940	5000			5670
17	1820	1360	1650	1180	1040	1150	5020	4940	4990			5710
18	3720	400	1340	1160	1080	1110	5040	5000	5020			5760
19	1260	440	758	1400	1120	1240	---	---	5040			5800
20	4820	740	1730	1620	1420	1530	---	---	5050			5720
21	900	720	819	1820	1640	1730	---	---	5080			5740
22	1040	920	960	2060	1840	1940	---	---	5120			5780
23	1240	1040	1140	2260	2060	2170	---	---	5130			5790
24	1440	1260	1350	2580	2300	2440	---	---	5150			5870
25	1660	1460	1550	2900	2580	2710	---	---	5140			5940
26	1820	1660	1730	3560	2920	3210	---	---	5200			5990
27	2020	1840	1920	4280	3580	3950	---	---	5220			5970
28	2180	2040	2100	4620	4300	4460	---	---	5190			5960
29	2380	2200	2280	4780	4640	4700	---	---	5170			5930
30	2440	2280	2370	5020	4780	4880	---	---	5200			5960
31	2520	2360	2440	---	---	---	---	---	5240			5880
MONTH	4820	340	1420	5020	980	3020	5620	4940	5200			5700

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	5900	6340	6220	6270	7680	7600	7650	4780	4220	4480
2	---	---	5810	6420	6240	6340	7700	7620	7660	4200	3780	4050
3	---	---	5440	6520	6400	6460	7840	7520	7700	3960	3780	3900
4	---	---	5620	6600	6440	6550	7940	7660	7820	4000	3780	3940
5	---	---	5710	6660	6540	6620	7980	7820	7920	4180	4000	4080
6	---	---	5680	6700	6580	6660	8020	7880	7960	4400	4180	4280
7	---	---	5820	6720	6640	6690	8060	7920	7990	4500	4360	4440
8	---	---	5870	6800	6700	6740	8100	7980	8030	4760	4500	4620
9	---	---	5850	6840	6760	6800	8060	7900	7980	4840	4680	4760
10	---	---	5900	6900	6740	6840	7940	7860	7900	5020	4700	4880
11	---	---	5970	7000	6880	6930	8100	7840	8010	5140	4980	5060
12	---	---	6030	7200	7000	7110	8140	8040	8090	5220	5080	5160
13	---	---	6070	7220	7160	7200	8160	8020	8090	5400	5180	5300
14	---	---	6150	7260	7120	7160	8140	8040	8090	5540	5320	5430
15	---	---	6160	7400	7260	7330	8240	8100	8160	5720	5440	5560
16	---	---	6120	7420	7280	7390	8700	8000	8640	5780	5580	5680
17	---	---	6320	7500	7400	7450	8820	8640	8720	5900	5700	5810
18	---	---	6280	7440	7360	7400	8840	8640	8760	6040	5760	5950
19	---	---	6150	7480	7420	7460	8760	8580	8670	6160	5920	6040
20	---	---	6200	7440	7260	7400	9200	8440	8710	6240	6080	6150
21	---	---	6270	7440	7280	7390	9300	8560	8830	6420	6200	6310
22	---	---	6290	7460	7380	7420	9460	9300	9370	6660	6340	6500
23	---	---	5960	7500	7380	7450	9500	9380	9440	6860	6560	6710
24	---	---	6040	7500	7420	7470	9620	9360	9470	6960	5600	6800
25	---	---	6140	7520	7440	7480	9580	9280	9450	4020	380	1100
26	---	---	6180	7540	7380	7490	10200	9340	9770	1620	440	983
27	---	---	6220	7520	7400	7480	10200	10000	10100	1340	800	1030
28	6220	6180	6200	7600	7460	7520	9980	9180	9540	2220	1300	1860
29	---	---	---	7560	7500	7540	9080	5460	7150	2100	1740	1920
30	---	---	---	7580	7320	7520	5540	4800	5130	2220	820	1570
31	---	---	---	7640	7500	7570	---	---	---	2900	760	1600
MONTH	6220	6180	6010	7640	6220	7130	10200	4800	8360	6960	380	4390

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	3940	1880	2690			3580			4950	---	---	3660
2	2460	600	1570			3840			4910	---	---	3490
3	1240	640	883			4230			4980	---	---	4990
4	1220	620	956			4560			5020	---	---	4070
5	1200	740	875			4740			4840	---	---	3810
6	980	460	774			2270			4670	---	---	3630
7	1560	500	783			2190			4830	---	---	4480
8	900	260	613			2290			4910	---	---	5210
9	2300	720	1230			2350			4990	---	---	6090
10	2700	700	1640			2500			5080	---	---	6620
11	2580	1660	2020			2560			4370	7400	6400	6950
12	3300	2620	2890			2660			4190	8000	7400	7700
13	3980	3340	3780			2750			5220	8200	8000	8070
14	4360	3960	4140			2890			5400	8000	7600	7800
15	4260	3600	3960			2970			5550	7700	6700	7430
16	---	---	4170			3040			5610	7500	6700	7200
17	---	---	2610			3160			5700	7700	7000	7410
18	---	---	2740			3210			5750	7800	7200	7490
19	---	---	2510			3270			5690	8400	7800	8060
20	---	---	2150			3390			5540	8900	8400	8640
21	---	---	2220			3500			5630	9100	8900	9010
22	---	---	2500			3610			5700	9300	9100	9170
23	---	---	2710			3680			5770	9400	9200	9290
24	---	---	2890			3820			5870	9600	9400	9510
25	---	---	2960			3980			5720	9700	9500	9580
26	---	---	3040			4110			5530	9600	9400	9540
27	---	---	3090			4290			3690	9600	9300	9490
28	---	---	3130			4410			2010	9600	9200	9430
29	---	---	3250			4550			1920	9500	9300	9440
30	---	---	3390			4690			3630	9500	9400	9470
31	---	---	---			4860			4850	---	---	---
MONTH	4360	260	2410			3480			4920	9700	6400	7220

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20.0	16.5	18.0	16.0	14.0	15.0	12.0	9.0	10.5			
2	20.0	15.0	18.5	17.5	12.5	15.0	9.0	5.5	6.5			
3	25.5	17.0	20.5	17.5	11.5	14.5	9.5	4.0	7.0			
4	23.0	18.0	20.0	18.5	11.0	15.0	11.5	7.0	9.5			
5	24.0	15.5	19.5	18.5	13.0	16.0	11.5	6.5	9.5			
6	24.0	13.0	19.5	18.5	13.5	16.0	12.0	7.5	10.0			
7	25.5	17.5	21.5	17.5	13.0	15.5	13.0	5.5	10.5			
8	27.0	19.5	23.0	17.5	13.0	14.5	11.5	7.5	10.0			
9	25.0	21.0	24.0	22.0	16.0	18.5	17.0	10.0	13.5			
10	24.5	22.0	23.0	20.5	17.0	18.5	15.5	7.5	11.5			
11	26.0	22.0	24.0	16.5	14.0	14.5	7.5	5.0	5.5			
12	26.5	21.0	25.0	21.0	13.0	17.0	5.0	3.5	4.0			
13	27.5	24.5	25.5	22.5	19.5	20.5	4.0	2.0	3.0			
14	26.0	18.0	23.0	21.5	15.5	19.5	5.0	1.0	3.0			
15	23.0	17.5	20.5	16.5	14.0	15.0	7.5	2.5	5.0			
16	24.5	20.0	21.5	15.5	11.5	13.0	7.5	3.5	5.5			
17	23.0	21.5	22.0	19.0	12.5	15.5	8.0	3.5	6.0			
18	23.5	20.0	22.0	21.5	16.0	18.0	6.5	4.0	5.0			
19	23.5	20.0	22.0	18.5	13.5	17.0	---	---	---			
20	21.5	16.0	20.0	13.5	10.0	12.0	---	---	---			
21	22.0	14.0	20.5	13.0	10.0	11.5	---	---	---			
22	25.0	20.0	22.5	15.5	9.0	12.0	---	---	---			
23	26.0	21.5	24.0	17.5	12.5	14.5	---	---	---			
24	27.0	19.0	23.0	16.0	11.5	14.0	---	---	---			
25	26.0	21.5	23.5	20.0	14.0	16.5	---	---	---			
26	25.5	18.5	22.0	20.0	14.0	18.0	---	---	---			
27	26.0	20.5	23.0	17.5	13.0	15.0	---	---	---			
28	23.0	20.0	21.0	13.5	11.5	12.5	---	---	---			
29	23.0	18.5	20.5	15.5	10.0	12.0	---	---	---			
30	20.0	14.0	17.5	16.5	13.0	14.5	---	---	---			
31	21.0	14.5	17.0	---	---	---	---	---	---			
MONTH	27.5	13.0	21.5	22.5	9.0	15.5	17.0	1.0	7.5			

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued
(National stream-quality accounting network)

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	17.0	9.5	13.0	21.5	17.0	19.0	26.5	21.0	23.5
2	---	---	---	15.0	11.0	13.0	23.5	17.5	19.5	28.0	20.5	23.5
3	---	---	---	18.0	14.0	15.5	22.5	17.0	19.0	26.5	19.5	22.5
4	---	---	---	16.5	11.0	14.0	22.0	15.0	18.0	26.0	19.5	22.0
5	---	---	---	18.0	12.0	15.0	23.0	16.5	18.5	26.0	20.0	22.5
6	---	---	---	18.0	11.0	14.5	24.5	18.0	21.0	29.5	20.5	24.0
7	---	---	---	17.5	11.0	14.5	25.5	20.0	22.5	28.5	22.5	24.5
8	---	---	---	20.0	11.5	15.0	24.0	20.5	22.5	27.0	20.5	23.5
9	---	---	---	20.0	15.0	17.0	20.0	14.5	16.5	24.5	20.0	22.0
10	---	---	---	19.0	13.0	16.0	16.5	13.0	14.5	25.5	19.5	22.0
11	---	---	---	19.0	14.0	16.0	21.5	14.5	17.5	28.5	20.0	23.0
12	---	---	---	16.5	9.5	13.5	23.0	17.5	19.5	26.5	19.5	23.0
13	---	---	---	15.5	11.0	13.5	25.5	17.5	21.0	28.0	20.5	23.5
14	---	---	---	16.5	11.0	14.0	21.5	16.5	19.0	27.0	22.5	24.5
15	---	---	---	17.5	11.5	14.5	22.0	15.0	18.5	29.5	20.5	24.0
16	---	---	---	19.5	11.5	15.0	24.5	14.0	21.5	26.0	21.0	23.0
17	---	---	---	18.0	12.5	15.5	26.5	17.5	21.5	22.5	15.0	19.0
18	---	---	---	18.0	13.0	15.5	25.0	19.5	22.0	21.5	13.0	17.0
19	---	---	---	14.5	10.0	12.5	22.5	17.5	20.5	24.5	17.0	20.0
20	---	---	---	15.0	9.0	12.0	25.0	15.0	19.0	26.0	18.0	22.0
21	---	---	---	16.5	9.5	12.5	26.5	16.5	21.0	27.0	17.0	21.5
22	---	---	---	19.0	11.0	15.0	24.5	17.0	21.0	27.5	17.5	21.5
23	---	---	---	20.0	11.5	15.5	24.5	17.0	20.5	27.5	20.5	23.5
24	---	---	---	20.5	12.5	16.5	28.0	19.0	22.5	30.0	22.0	26.0
25	---	---	---	19.5	12.5	16.0	28.0	19.5	22.5	20.0	17.0	18.5
26	---	---	---	22.0	13.5	17.0	26.5	19.0	23.0	22.0	17.5	20.0
27	---	---	---	23.0	15.5	19.0	23.5	19.0	21.5	21.0	19.0	20.0
28	16.5	14.0	15.5	23.5	16.0	19.5	25.5	16.0	21.0	24.0	19.0	21.5
29	---	---	---	21.0	16.0	18.5	27.5	20.5	24.0	24.5	21.0	22.5
30	---	---	---	23.5	16.0	19.5	26.5	21.0	23.5	21.5	19.0	20.5
31	---	---	---	24.5	17.0	20.5	---	---	---	22.0	19.5	20.5
MONTH	16.5	14.0	15.5	24.5	9.0	15.5	28.0	13.0	20.5	30.0	13.0	22.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	24.5	20.0	22.0									
2	24.5	19.5	22.0									
3	22.0	19.0	20.5									
4	25.0	20.5	22.5									
5	26.5	23.5	24.5									
6	25.5	22.0	24.0									
7	24.0	22.0	23.5									
8	24.5	21.5	23.5									
9	26.5	24.0	25.0									
10	29.5	25.0	27.0									
11	29.5	25.0	27.5									
12	31.5	25.5	28.5									
13	30.5	26.5	28.5									
14	32.0	26.0	29.0									
15	29.0	26.5	27.5									
16	---	---	---									
17	---	---	---									
18	---	---	---									
19	---	---	---									
20	---	---	---									
21	---	---	---									
22	---	---	---									
23	---	---	---									
24	---	---	---									
25	---	---	---									
26	---	---	---									
27	---	---	---									
28	---	---	---									
29	---	---	---									
30	---	---	---									
31	---	---	---									
MONTH	32.0	19.0	25.0									

08123950 E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX

LOCATION.--Lat 31°52'46", long 100°31'01", Coke County, Hydrologic Unit 12080008, in outlet works of Robert Lee Dam on the Colorado River, 2.2 mi west of Robert Lee, and at mile 712.4.

DRAINAGE AREA.--15,278 mi^2, approximately, of which 10,260 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1968 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to June 24, 1969, nonrecording gage at same site and datum.

REMARKS.--The reservoir is formed by a rolled earthfill dam 21,500 ft long. Closure was made Dec. 30, 1968, and dam was completed in June 1969. The dam is the property of the Colorado River Municipal Water District, which has a permit to divert 50,000 acre-ft annually for municipal, mining, and industrial uses. Inflow into the reservoir is partially regulated by Lake J. B. Thomas, Lake Colorado City, and by Champion Creek Reservoir (stations 08118000, 08123000, and 08123600). There are two spillways: The controlled service spillway is a morning-glory type that is partially controlled by 12 lift gates, 14.48 by 22.0 ft, and discharges through a 28.0-foot-diameter concrete conduit. The uncontrolled spillway is a 3,200-foot-wide cut through natural ground near the right end of dam. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,928.0	-
Crest of spillway	1,908.0	653,400
Top of gates	1,900.0	519,300
Top of conservation pool	1,898.0	488,800
Crest of spillway	1,878.0	262,900
Lowest gated outlet (invert)	1,815.85	4,000

COOPERATION.--Capacity table (dated March 1972) was furnished by the Colorado River Municipal Water District. Records of diversions can be obtained from the city of San Angelo and from the Colorado River Municipal Water District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 342,900 acre-ft July 15, 1982 (elevation, 1,885.90 ft); minimum since first appreciable storage in June 1969 (not from recorder), about 330 acre-ft May 29, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 257,300 acre-ft Sept. 10, 13 at 2400 hours (elevation, 1,877.38 ft); minimum, 179,600 acre-ft May 24 (elevation, 1,867.60 ft).

Capacity table (elevation, in feet, and contents, in acre-feet)

1,867.0	175,400	1,875.0	235,900
1,871.0	204,400	1,878.0	262,900

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	206700	208800	205300	201000	197900	195600	189900	184000	193000	221100	213700	231500
2	206500	208500	204900	201000	198900	195500	189600	183600	199600	221000	213200	234000
3	206400	208400	204900	200900	199100	195300	189700	183400	202200	220900	212900	235000
4	206100	208200	204800	200800	198900	195100	189500	183000	204600	220700	212600	238800
5	205900	207900	204600	200600	199400	195000	189300	183000	206000	220300	212400	244000
6	205500	207900	204300	200500	199200	194700	189100	182600	207400	220100	212100	249600
7	205400	207600	204300	200400	199100	194500	189100	182500	210900	219700	211700	254000
8	205400	207300	204200	200200	198900	194400	188800	182300	215300	220000	211500	256200
9	205300	207500	204100	200100	198800	194700	188400	181500	217300	219700	211200	257100
10	205800	207300	204100	200100	198600	194100	188300	182100	218400	219300	211000	257300
11	206400	207000	203900	200000	198300	194000	188300	181900	218600	219000	210800	256900
12	206400	207000	203700	199900	198000	193600	188000	181500	218800	218800	210600	257100
13	206400	207100	203500	199800	198000	193600	187900	181400	218700	218500	210300	257300
14	206700	207300	203200	199800	197900	192900	187400	181000	218600	218100	210000	257100
15	206600	207200	203200	199600	198000	193100	187200	180700	218500	217800	209700	256900
16	206200	207000	203100	199600	197900	192800	186800	180500	218100	217500	209600	256500
17	207000	207000	203000	199600	197700	192900	186900	181500	218800	217200	209300	256200
18	207700	206900	202700	199500	197600	192600	186600	181200	219200	216900	209300	255300
19	208800	206700	202600	199400	197600	192400	186400	181000	220200	216800	209000	254600
20	209300	206400	202600	199200	197200	192200	186200	180700	220900	216500	208600	254100
21	209700	206400	202500	199100	197100	192100	185800	180300	221300	216100	208300	253200
22	210000	206200	202400	199000	196900	191700	185500	180200	221600	216800	207600	252400
23	210100	206100	202200	198800	196800	191400	185300	179900	222200	216500	207600	252000
24	210000	205900	202100	198900	196700	191400	185100	179600	222300	216300	207300	250800
25	209900	206100	201700	198600	196500	191100	184800	183600	222400	216100	207300	249800
26	209700	206100	201700	198600	196500	191100	184600	184900	222400	215800	210000	248600
27	209600	205800	201500	198300	196100	191000	184300	185800	222100	215400	217900	247600
28	209400	205600	201500	198300	195700	190800	184000	186800	222000	214900	226100	246600
29	209100	205600	201300	198100	---	190500	184100	187300	221700	214500	227000	245400
30	208900	205700	201300	197900	---	190300	184300	189600	221300	214300	227300	245000
31	208800	---	201100	198000	---	190100	---	192300	---	214100	227400	---
MAX	210100	208800	205300	201000	199400	195600	189900	192300	222400	221100	227400	257300
MIN	205300	205600	201100	197900	195700	190100	184000	179600	193000	214100	207300	231500
(†)	1871.58	1871.17	1870.56	1870.14	1869.84	1869.09	1868.27	1869.39	1873.17	1872.27	1873.94	1876.01
(Φ)	+2300	-3100	-4600	-3100	-2300	-5600	-5800	+8000	+29000	-7200	+13300	+17600

CAL YR 1985 MAX 225300 MIN 201100 (Φ) -9600
WTR YR 1986 MAX 257300 MIN 179600 (Φ) +38500

(†) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

08123950 E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year. Biochemical analyses: October 1977 to September 1978, October 1979 to current year.

315235100312201 - E.V.SPENCE RES SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB							
20...	1056	1.00	3260	8.50	13.0	8.7	90
20...	1058	10.0	3260	8.45	12.0	8.6	87
20...	1100	20.0	3260	8.40	11.5	8.4	84
20...	1102	30.0	3260	8.40	11.5	8.2	82
20...	1104	43.0	3290	8.40	11.0	7.7	76
MAY							
14...	1318	1.00	3420	8.20	23.0	7.0	89
14...	1320	10.0	3420	8.20	23.0	7.0	89
14...	1322	20.0	3420	8.10	22.5	6.9	87
14...	1324	30.0	3410	8.00	22.0	6.1	76
14...	1326	40.0	3410	7.90	21.5	5.7	71
JUL							
16...	1125	1.00	3200	8.20	26.0	6.1	81
16...	1127	10.0	3200	8.20	26.0	6.1	81
16...	1129	20.0	3200	8.10	26.0	5.7	76
16...	1131	30.0	3290	7.60	24.5	3.7	48
16...	1133	40.0	3380	7.60	23.5	3.2	41

315335100312401 - E.V.SPENCE RES SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CACO3)
FEB									
20...	1020	1.00	3240	8.50	12.5	1.50	8.6	88	640
20...	1022	10.0	3240	8.50	11.5	--	8.5	85	--
20...	1024	20.0	3250	8.50	11.5	--	8.5	85	--
20...	1026	30.0	3260	8.50	11.0	--	8.4	83	--
20...	1028	40.0	3250	8.40	11.0	--	8.2	81	--
20...	1030	50.0	3250	8.40	11.0	--	8.1	80	--
20...	1032	60.0	3260	8.40	10.5	--	8.0	78	--
20...	1034	70.0	3240	8.40	10.5	--	7.8	76	--
20...	1036	75.0	3240	8.40	10.5	--	7.7	75	670
MAY									
14...	1222	1.00	3410	8.30	23.0	1.40	7.2	92	630
14...	1224	10.0	3410	8.30	23.0	--	7.2	92	--
14...	1226	20.0	3410	8.30	22.5	--	7.2	91	--
14...	1228	30.0	3400	8.30	22.5	--	7.1	90	--
14...	1230	40.0	3400	8.30	22.0	--	7.0	88	--
14...	1232	50.0	3400	7.80	20.0	--	5.4	65	--
14...	1234	60.0	3380	7.60	18.5	--	4.2	49	--
14...	1236	73.0	3380	7.60	17.5	--	4.0	46	650
JUL									
16...	1050	1.00	3160	8.30	26.5	1.50	6.2	84	570
16...	1052	10.0	3160	8.30	26.5	--	6.2	84	--
16...	1054	20.0	3160	8.30	26.0	--	6.2	83	--
16...	1056	30.0	3160	8.30	26.0	--	6.0	80	--
16...	1058	40.0	3370	7.60	23.5	--	3.0	38	--
16...	1100	50.0	3390	7.60	22.5	--	3.0	38	--
16...	1102	60.0	3400	7.60	22.0	--	3.0	37	--
16...	1104	70.0	3420	7.50	21.5	--	3.0	37	--
16...	1106	78.0	3430	7.50	21.0	--	3.0	36	660

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

315335100312401 - E.V.SPENCE RES SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB									
20...	520	130	77	440	8	12	119	510	760
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	560	140	79	420	7	12	119	510	760
MAY									
14...	510	130	74	480	9	14	119	500	740
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	520	130	80	480	8	13	133	490	730
JUL									
16...	460	120	66	430	8	14	110	460	680
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	510	140	75	430	7	14	153	490	720

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB								
20...	0.5	4.8	2000	0.10	0.7	0.02	30	<10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	0.10	0.7	0.01	30	<10
20...	--	--	--	0.10	0.7	0.01	30	<10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	5.1	2000	0.10	0.7	0.02	20	10
MAY								
14...	0.5	5.1	2000	<0.10	0.5	0.01	30	10
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	<0.10	0.5	0.02	20	300
14...	--	--	--	<0.10	0.6	0.02	20	20
14...	--	--	--	--	--	--	--	--
14...	--	7.0	2000	<0.10	1.2	0.05	60	1400
JUL								
16...	0.5	4.6	1800	<0.10	0.7	0.01	30	10
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	--	--	--	<0.10	0.5	0.02	10	60
16...	--	--	--	<0.10	0.7	0.02	20	280
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	--	8.7	2000	<0.10	1.7	0.16	110	1500

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

315413100312501 - E.V.SPENCE RES SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
20...	1005	1.00	3250	8.40	12.0	8.5	86
20...	1007	10.0	3250	8.40	12.0	8.4	85
20...	1009	20.0	3250	8.40	11.5	8.3	83
20...	1011	33.0	3250	8.30	11.5	8.2	82
MAY							
14...	1254	1.00	3430	8.30	23.5	7.3	94
14...	1256	10.0	3430	8.30	23.5	7.3	94
14...	1258	20.0	3430	8.30	23.5	7.3	94
14...	1300	30.0	3430	8.30	23.0	7.3	93
14...	1302	42.0	3430	8.10	23.0	5.4	69
JUL							
16...	1025	1.00	3160	8.40	26.5	6.5	88
16...	1027	10.0	3160	8.40	26.5	6.4	86
16...	1029	20.0	3160	8.40	26.5	6.4	86
16...	1031	30.0	3160	8.30	26.5	6.4	86

315558100342601 - E.V.SPENCE RES SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
FEB									
20...	1118	1.00	3250	8.40	13.0	0.9	8.3	86	670
20...	1120	10.0	3250	8.40	12.5	--	8.2	84	--
20...	1122	20.0	3270	8.40	11.5	--	8.0	80	--
20...	1124	30.0	3250	8.40	11.0	--	7.9	78	--
20...	1126	40.0	3250	8.40	11.0	--	7.9	78	650
MAY									
14...	0956	1.00	3460	8.30	23.5	0.9	7.2	93	770
14...	0958	10.0	3460	8.30	23.5	--	7.2	93	--
14...	1000	20.0	3460	8.30	23.5	--	7.2	93	--
14...	1002	30.0	3430	8.10	22.5	--	6.1	77	--
14...	1004	37.0	3410	7.80	22.0	--	5.3	66	770
JUL									
16...	1155	1.00	2940	8.40	27.0	0.8	6.3	86	520
16...	1157	10.0	2940	8.40	27.0	--	6.3	86	--
16...	1159	20.0	2940	8.40	27.0	--	6.3	86	--
16...	1201	30.0	2950	8.40	27.0	--	6.2	84	--
16...	1203	42.0	3340	7.50	24.0	--	3.1	40	610

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)
FEB								
20...	550	140	78	420	7	13	119	510
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	530	130	78	470	8	12	119	510
MAY								
14...	650	160	90	480	8	13	121	510
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	650	160	90	480	8	13	120	500
JUL								
16...	410	110	60	400	8	15	107	430
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	480	130	70	420	8	17	133	470

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

315550100342601 - E.V.SPENCE RES SITE BC--*Continued*

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB								
20...	760	4.8	2000	0.10	0.7	0.01	20	<10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	0.10	0.7	0.01	30	<10
20...	--	--	--	--	--	--	--	--
20...	760	5.0	2000	0.10	0.8	0.02	30	<2
MAY								
14...	750	5.0	2100	<0.10	0.6	0.01	30	<10
14...	--	--	--	--	--	--	--	--
14...	--	--	--	<0.10	0.6	<0.01	20	<10
14...	--	--	--	--	--	--	--	--
14...	750	5.6	2100	<0.10	0.8	0.01	30	30
JUL								
16...	610	4.8	1700	<0.10	0.6	0.03	20	<10
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	--	--	--	<0.10	0.6	0.03	10	50
16...	730	7.1	1900	<0.10	0.9	0.03	90	1600

315619100335601 - E.V.SPENCE RES SITE BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
20...	1125	1.00	3280	8.40	13.0	8.3	86
20...	1127	10.0	3260	8.40	11.5	8.1	81
20...	1129	20.0	3260	8.40	11.5	7.9	79
20...	1131	28.0	3260	8.40	11.5	7.8	78
MAY							
14...	1022	1.00	3450	8.30	23.5	7.3	94
14...	1024	10.0	3450	8.30	23.5	7.3	94
14...	1026	20.0	3460	8.30	23.5	7.3	94
14...	1028	25.0	3460	8.20	23.5	7.0	90
JUL							
16...	1242	1.00	3020	8.40	27.5	6.5	--
16...	1244	10.0	3020	8.40	27.5	6.5	--
16...	1246	20.0	3030	8.40	27.5	6.5	--
16...	1248	30.0	3070	8.30	27.5	6.1	--

315712100352001 - E.V.SPENCE RES SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
20...	1150	1.00	3240	8.40	14.0	8.3	88
20...	1152	10.0	3260	8.40	12.5	8.1	83
20...	1154	23.0	3260	8.40	12.5	7.9	81
MAY							
14...	1046	1.00	3500	8.30	25.0	7.1	94
14...	1048	10.0	3500	8.30	24.5	7.1	93
14...	1050	22.0	3500	8.20	24.5	7.0	92
JUL							
16...	1302	1.00	2800	8.40	28.0	6.5	--
16...	1304	10.0	2800	8.40	27.5	6.4	--
16...	1306	20.0	2800	8.40	27.5	6.4	--
16...	1308	25.0	2830	8.40	27.5	6.3	--

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

315810100364901 - E.V.SPENCE RES SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
FEB									
20...	1212	1.00	3310	8.50	15.5	0.7	8.7	95	690
20...	1214	10.0	3230	8.40	14.0	--	7.9	84	--
20...	1216	16.0	3210	8.30	13.5	--	7.2	75	660
MAY									
14...	1140	1.00	3990	8.10	24.5	0.3	6.5	86	680
14...	1142	12.0	4070	7.80	24.0	--	5.2	68	800
JUL									
16...	1326	1.00	1890	8.30	28.0	0.2	6.1	--	370
16...	1328	10.0	1900	8.10	27.5	--	5.4	--	--
16...	1330	17.0	1910	7.90	27.5	--	4.8	--	380

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)
FEB								
20...	560	150	77	420	7	11	130	550
20...	--	--	--	--	--	--	--	--
20...	540	140	76	380	7	11	126	490
MAY								
14...	550	140	80	570	10	14	130	610
14...	670	170	92	570	9	14	133	630
JUL								
16...	270	84	39	230	5	9.6	103	260
16...	--	--	--	--	--	--	--	--
16...	270	86	39	230	5	9.7	107	270

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB								
20...	760	4.3	2100	<0.10	0.8	0.03	30	<10
20...	--	--	--	<0.10	0.7	0.03	20	<10
20...	690	4.8	1900	<0.10	0.8	0.03	30	20
MAY								
14...	920	4.3	2400	<0.10	1.0	0.04	50	60
14...	950	4.9	2500	<0.10	1.1	0.05	20	200
JUL								
16...	380	6.9	1100	<0.10	0.8	0.06	8	10
16...	--	--	--	<0.10	0.8	0.06	50	90
16...	380	7.4	1100	<0.10	1.1	0.05	47	190

08124000 COLORADO RIVER AT ROBERT LEE, TX

LOCATION.--Lat 31°53'07", long 100°28'49", Coke County, Hydrologic Unit 12080008, on left bank 190 ft upstream from bridge on State Highway 208 in Robert Lee, 0.4 mi upstream from Mountain Creek, 2.7 mi downstream from Messbox Creek, 3.7 mi downstream from Robert Lee Dam, and at mile 712.4.

DRAINAGE AREA.--15,307 mi^2, of which 10,260 mi^2 probably is noncontributing.

PERIOD OF RECORD.--October 1923 to December 1927, April 1939 to May 1956, and October 1968 to current year. Prior to December 1927, published as "near Robert Lee".

REVISED RECORDS.--WSP 1723: 1925(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,771.70 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 31, 1927, nonrecording gage at site 9 mi downstream at different datum. Apr. 18 to Sept. 26, 1939, nonrecording gage, and Sept. 27, 1939, to May 9, 1956, water-stage recorder at site 200 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Since April 1949 flow has been affected by Lake Colorado City and since July 1952 by Lake J. B. Thomas. Since December 1968, flow has been regulated by E. V. Spence Reservoir (station 08123950). There are many diversions above station for municipal, mining, agricultural, and industrial uses. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years (water years 1924-27, 1940-55) prior to completion of Robert Lee Dam, 207 ft^3/s (150,000 acre-ft/yr); 18 years (water years 1969-86) regulated, 5.56 ft^3/s (4,030 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,500 ft^3/s Sept. 6, 1926 (gage height, 20.20 ft, site and datum then in use), from rating curve extended above 15,000 ft^3/s; maximum gage height, 20.63 ft Sept. 9, 1980; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 26.7 ft Oct. 13, 1957, from floodmarks. Flood in April 1922 reached a stage of 25.5 ft, present datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,570 ft^3/s June 2 at 2400 hours (gage height, 9.76 ft); 0.01 ft^3/s May 21-24, 31, Aug. 21, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.12	.15	.13	.10	.06	.19	.03	2.3	.13	.19	116
2	.07	.13	.15	.16	6.3	.06	.28	.03	112	.15	.14	4.2
3	.05	.12	.15	.14	8.4	.06	.26	.03	175	.48	.09	3.5
4	.04	.12	.15	.11	.49	.07	.19	.03	4.4	.29	.10	1.8
5	.04	.13	.14	.14	.17	.07	.12	.03	2.4	.18	.08	1.3
6	.04	.13	.14	.19	.25	.07	.09	.02	1.9	.12	.05	1.5
7	.03	.13	.15	.17	.10	.09	.06	.02	3.0	.12	.04	.59
8	.03	.13	.14	.26	.10	.08	.08	.02	1.7	.10	.04	.32
9	.04	.13	.14	.31	.10	.07	.08	.02	1.1	.09	.04	82
10	.13	.13	.13	.33	.10	.06	.07	.05	.97	.08	.05	608
11	.12	.13	.13	.28	.10	.06	.06	.03	.99	.08	.05	611
12	.09	.13	.12	.15	.10	.06	.06	.02	.85	.10	.05	617
13	.06	.13	.11	.12	.10	.06	.05	.02	.68	.10	.04	627
14	.08	.13	.10	.15	.10	.06	.06	.02	.70	.09	.04	621
15	.11	.13	.12	.18	.10	.07	.05	.02	.60	.07	.04	619
16	.07	.13	.14	.14	.10	.07	.05	.02	.70	.06	.04	618
17	.17	.13	.14	.10	.11	.06	.04	.02	1.8	.05	.04	619
18	85	.13	.13	.10	.11	.07	.04	.02	.69	.04	.03	621
19	4.0	.13	.13	.08	.10	.07	.04	.02	.54	.04	.02	619
20	.79	.13	.15	.07	.10	.07	.04	.02	.52	.04	.02	619
21	.19	.13	.14	.07	.10	.08	.04	.01	.61	.04	.01	619
22	.09	.13	.14	.09	.10	.08	.03	.01	4.0	.10	.02	622
23	.08	.13	.14	.10	.10	.05	.03	.01	2.3	.33	.01	626
24	.08	.13	.11	.10	.10	.06	.03	.01	1.1	.35	.02	627
25	.07	.13	.10	.10	.09	.06	.03	.90	.64	.19	.03	611
26	.08	.16	.14	.10	.09	.07	.03	.03	.42	.12	32	610
27	.08	.16	.13	.10	.10	.08	.03	.02	.28	.07	41	606
28	.08	.16	.12	.10	.08	.05	.03	.02	.24	19	204	597
29	.08	.16	.11	.10	---	.05	.03	.01	.17	104	9.1	599
30	.11	.16	.14	.10	---	.12	.04	127	.13	19	1.6	610
31	.12	---	.12	.10	---	.17	---	8.7	---	.85	.80	---
TOTAL	92.11	4.02	4.10	4.37	17.89	2.21	2.23	137.21	322.73	146.46	289.78	13137.21
MEAN	2.97	.13	.13	.14	.64	.07	.07	4.43	10.8	4.72	9.35	438
MAX	85	.16	.15	.33	8.4	.17	.28	127	175	104	204	627
MIN	.03	.12	.10	.07	.08	.05	.03	.01	.13	.04	.01	.32
AC-FT	183	8.0	8.1	8.7	35	4.4	4.4	272	640	291	575	26060

CAL YR 1985 TOTAL 773.46 MEAN 2.12 MAX 259 MIN .00 AC-FT 1530
WTR YR 1986 TOTAL 14160.32 MEAN 38.8 MAX 627 MIN .01 AC-FT 28090

08126380 COLORADO RIVER NEAR BALLINGER, TX

LOCATION.--Lat 31°42'55", long 100°01'34", Runnels County, Hydrologic Unit 12090101, at left downstream end of bridge on Farm Road 2111, 0.4 mi upstream from Rocky Creek, 5.0 mi northwest of Ballinger, and at mile 665.8.

DRAINAGE AREA.--16,358 mi², approximately, of which 10,260 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1907 to September 1979 (published as "at Ballinger", station 08126500), October 1979 to current year. Monthly discharge only for some periods published in WSP 1312. Gage-height records collected in this vicinity from 1903-29 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1118: Drainage area. WSP 1512: 1916-17, 1919-20, 1921(M), 1922-25, 1928(M), 1930(M). WSP 1712: 1935, 1954-55(M). WDR TX-78-3: 1975-77.

GAGE.--Water-stage recorder. Datum of gage is 1,606.51 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 29, 1930, nonrecording gages at several sites and at various datums near site 5.4 mi downstream. Nov. 29, 1930, to May 1, 1975, water-stage recorder at site 6.2 mi downstream and May 1, 1975, to Sept. 30, 1979, water-stage recorder at site 5.4 mi downstream, both at datum 12.77 ft lower.

REMARKS.--Estimated daily discharges: May 17-27, Sept. 1-14. Records good except those for periods of estimated daily discharges, which are fair. There are many diversions above station for irrigation, municipal supplies, and oilfield operation. Flow is affected by E. V. Spence and Oak Creek Reservoirs (see stations 08123950 and 08125500) and at times by discharge from floodwater-retarding structures in the Kickapoo and Valley Creeks drainage basins.

AVERAGE DISCHARGE.--61 years (water years 1908-68) prior to completion of Robert Lee Dam, 336 ft³/s (243,400 acre-ft/yr); 18 years (water years 1969-86) partially regulated, 50.8 ft³/s (36,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,400 ft³/s Sept. 18, 1936 (gage height, 28.6 ft, at former site and datum); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 36 ft sometime in 1884, at former site and datum, from information by local residents. Flood of Aug. 6, 1906, reached a stage of about 32.0 ft, at former site and datum, from floodmarks (backwater from Elm Creek).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,400 ft³/s Aug. 28 at 2100 hours (gage height, 25.07 ft); no flow at times on Mar. 19-22, 24-29, Mar. 31 to Apr. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	4.7	4.5	2.7	4.8	3.1	.80	1.2	576	3.1	.56	3680
2	22	3.8	3.7	2.7	14	2.9	.48	1.3	1080	19	.61	3230
3	13	3.2	4.2	2.6	107	3.1	.86	1.0	1330	12	.74	1160
4	9.2	2.7	4.0	2.4	34	3.3	.56	.80	710	15	.88	623
5	7.3	2.2	3.1	2.2	13	4.1	.66	.96	219	5.4	1.4	466
6	7.1	1.9	2.9	2.1	22	4.1	1.2	1.2	171	3.0	1.2	651
7	6.3	1.9	1.5	2.1	25	4.5	1.4	4.4	106	2.1	1.2	540
8	6.3	2.1	2.5	2.1	13	3.4	1.1	1.6	54	2.0	1.2	338
9	5.8	2.1	3.2	2.1	7.1	3.8	1.0	1.2	34	1.9	1.0	299
10	56	2.1	3.0	2.2	4.9	3.7	2.1	1.9	22	1.8	1.0	245
11	70	2.1	2.7	2.3	4.2	3.5	1.7	.96	17	1.3	35	834
12	18	2.5	3.0	2.5	2.8	4.2	1.5	.80	14	1.1	134	765
13	9.0	3.6	3.0	2.4	2.8	3.6	1.6	.80	12	1.1	26	718
14	6.5	2.8	2.8	2.5	2.8	4.4	1.4	.72	7.1	1.2	4.8	915
15	5.9	4.0	2.5	2.7	2.8	5.5	1.7	.65	7.1	1.1	1.3	702
16	5.6	2.8	2.5	3.0	3.4	5.3	1.6	.72	7.1	1.1	1.0	686
17	5.4	3.6	2.5	3.2	3.4	5.3	1.6	8.6	32	1.1	.88	684
18	1790	5.5	2.5	3.9	2.8	6.5	1.5	4.7	17	1.1	.98	668
19	482	7.1	2.5	3.7	2.8	2.5	1.5	5.0	229	1.1	1.1	661
20	149	5.2	2.5	1.6	2.8	1.7	.88	1.3	122	1.1	1.1	663
21	56	4.5	2.7	1.2	2.3	1.3	1.2	1.2	35	1.1	1.1	668
22	28	4.2	2.4	1.3	2.3	1.2	.40	.46	26	1.1	1.3	663
23	19	4.0	2.1	1.9	2.2	1.7	.35	.40	7.5	1.1	1.3	647
24	14	3.8	2.2	3.5	2.4	.81	.35	.46	4.0	1.0	1.3	638
25	5.7	4.2	2.2	2.8	2.4	.34	.40	11	2.4	.88	1.5	638
26	4.9	3.6	2.3	2.6	2.6	.23	.40	74	1.2	.88	1.6	638
27	4.0	4.1	2.4	2.6	3.3	.17	1.2	49	.80	.88	1370	634
28	3.2	4.2	2.5	3.1	3.0	.10	1.2	13	.72	.79	9220	634
29	3.2	4.5	2.4	1.7	---	.37	1.2	65	.65	.59	4360	647
30	2.8	4.4	2.5	1.6	---	1.2	1.2	717	.58	.55	440	663
31	2.5	---	2.7	3.7	---	.52	---	1250	---	.53	202	---
TOTAL	2850.7	107.4	85.5	77.0	295.9	86.44	33.04	2221.33	4845.15	86.00	15816.05	24998
MEAN	92.0	3.58	2.76	2.48	10.6	2.79	1.10	71.7	162	2.77	510	833
MAX	1790	7.1	4.5	3.9	107	6.5	2.1	1250	1330	19	9220	3680
MIN	2.5	1.9	1.5	1.2	2.2	.10	.35	.40	.58	.53	.56	245
AC-FT	5650	213	170	153	587	171	66	4410	9610	171	31370	49580

CAL YR 1985 TOTAL 7293.20 MEAN 20.0 MAX 1790 MIN .05 AC-FT 14470
WTR YR 1986 TOTAL 51502.51 MEAN 141 MAX 9220 MIN .10 AC-FT 102200

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1961 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1961 to current year.
WATER TEMPERATURES: October 1961 to current year.
SUSPENDED SEDIMENT DISCHARGE: January 1978 to September 1981.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request. Prior to October 1979, station was operated as 08126500 Colorado River at Ballinger.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 13,500 microsiemens May 3, 1963; minimum daily, 244 microsiemens Sept. 9, 1980.
WATER TEMPERATURES: Maximum daily, 39.0°C July 3, 1977; minimum daily, 0.0°C Jan. 9-11, 1973.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,740 mg/L Sept. 9 1980; minimum daily mean, 4 mg/L Feb. 2, 1980.
SEDIMENT LOADS: Maximum daily, 94,100 tons Aug. 3, 1978; minimum daily, 0 tons on many days during 1978 and 1980-81.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,770 microsiemens Apr. 24; minimum daily, 198 microsiemens Aug. 29.
WATER TEMPERATURES: Maximum daily, 35.0°C July 25, 26; minimum daily, 4.0°C Dec. 13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 02...	1100	22	931	16.0	260	170	68	21	79
JAN 10...	1225	2.2	3490	6.5	1400	1200	360	120	290
FEB 20...	0945	2.8	3150	16.0	1500	1300	380	130	210
APR 14...	1040	1.6	4590	22.0	2200	2000	550	210	340
JUN 04...	1215	643	312	25.0	110	29	32	6.9	14
AUG 29...	1000	3500	152	21.0	71	11	21	4.6	12

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 02...	2	7.0	85	170	130	0.2	5.1	530
JAN 10...	3	6.8	225	1200	450	0.4	6.7	2600
FEB 20...	2	7.0	167	1200	380	0.5	4.5	2400
APR 14...	3	6.6	233	2000	550	0.6	11	3800
JUN 04...	0.6	4.6	79	38	17	0.1	4.9	160
AUG 29...	0.6	4.1	60	19	13	0.2	4.7	110

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	2850.7	444	259	1990	67	516	76	585	130
NOV. 1985	107.4	2560	1750	507	370	107	710	206	950
DEC. 1985	85.5	3220	2310	534	460	106	1000	235	1300
JAN. 1986	77.0	3680	2740	570	520	107	1300	264	1600
FEB. 1986	295.9	2520	1740	1390	360	290	720	578	960
MAR. 1986	86.44	3510	2580	603	490	116	1200	274	1500
APR. 1986	33.04	4610	3670	327	630	56	1800	164	2200
MAY 1986	2221.33	750	464	2780	110	668	160	945	240
JUNE 1986	4845.15	353	198	2590	54	705	52	683	93
JULY 1986	86.00	1950	1350	314	280	65	560	131	740
AUG. 1986	15816.05	312	178	7590	47	2030	49	2100	84
SEPT 1986	24998	2030	1460	98300	290	19400	640	43100	820
TOTAL	51502.51	**	**	117000	**	24200	**	49300	**
WTD.AVG.	141	1210	845	**	170	**	350	**	460

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	760	2170	2880	3250	4070	3530	4260	4650	480	2850	4450	288
2	1050	1910	2910	3340	3790	3450	4300	4620	256	1250	4560	335
3	1230	1900	3080	3300	2640	3350	4380	4510	246	928	4500	520
4	1440	1950	3220	3330	2780	3390	4400	4590	334	863	4420	727
5	1870	2140	3230	3310	1580	3420	4480	4550	368	1210	2900	837
6	1880	2250	3220	3340	1100	3460	4520	4470	409	1540	2910	340
7	2420	2450	3260	3420	1350	3350	4540	3730	564	1820	2980	590
8	2460	2480	3230	3450	1750	3390	4590	3600	639	2150	2990	930
9	2450	2560	3250	3430	2290	3370	4540	3590	674	2440	3000	1090
10	1650	2650	3340	3510	2900	3520	4550	3480	750	2780	2990	1110
11	1540	2670	3390	3490	3080	3530	4560	3340	829	3060	2220	1810
12	1380	2710	3300	3460	3210	3510	4620	3510	1060	3170	1190	2810
13	1410	2730	3350	3440	3270	3520	4630	3660	1070	3250	1150	2890
14	1430	2740	3270	3450	3330	3540	4590	3650	1140	3340	1380	2100
15	1610	2680	3120	3460	3350	3500	4620	3910	1520	3460	1440	2790
16	1780	2740	3110	3490	3140	3630	4630	3900	1540	3750	1700	2960
17	1650	2820	3140	3500	3120	3640	4620	3440	1020	3800	2110	3000
18	270	2910	3200	3520	3050	3500	4660	2510	1210	4120	2530	2960
19	330	2700	3260	3530	3090	3490	4670	2500	350	4150	2960	2970
20	450	2640	3270	3620	3150	3590	4700	2490	431	4260	3370	2970
21	510	2510	3240	3630	3200	3610	4740	2920	522	4340	3620	3090
22	790	2530	3270	3650	3230	3630	4750	2940	562	4380	3630	3600
23	1010	2550	3280	3700	3200	3580	4740	3180	725	4390	3790	4020
24	1200	2600	3250	4350	3360	3740	4770	3270	975	4370	4000	4330
25	1350	2630	3300	4320	3370	3910	4740	3160	1230	4370	4010	4340
26	1620	2680	3280	4330	3380	4060	4760	2980	1630	4380	3970	4350
27	1640	2710	3310	4360	3390	4200	4730	2150	1890	4400	1050	4250
28	1790	2700	3330	4200	3450	4270	4750	2120	2120	4430	220	4120
29	1930	2660	3340	4140	---	4030	4700	1730	2170	4470	198	4130
30	2040	2750	3310	4150	---	3970	4640	900	2420	4500	381	4150
31	2080	---	3340	4110	---	4120	---	300	---	4510	435	---
MEAN	1450	2540	3230	3660	2950	3640	4610	3240	971	3310	2610	2480

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	15.0	8.0	11.0	20.0	20.0	22.5	25.5	25.0	33.0	34.0	25.0
2	15.0	18.0	8.0	12.5	17.0	21.5	21.0	24.0	23.5	30.5	32.5	24.0
3	15.0	20.0	---	---	15.5	18.5	22.0	24.5	21.5	28.5	34.5	27.0
4	20.0	19.0	12.5	---	19.0	20.0	24.5	---	26.0	29.0	32.5	27.0
5	20.5	18.0	14.0	---	17.0	19.0	24.0	---	26.5	32.0	33.0	26.5
6	22.0	18.0	14.0	10.0	19.0	21.0	25.0	---	27.0	32.0	33.0	25.5
7	22.0	18.0	15.0	6.0	15.0	21.5	27.0	---	27.5	32.0	33.0	---
8	22.0	18.0	15.0	5.0	10.0	24.0	27.0	22.5	30.0	30.0	33.0	---
9	25.0	---	16.0	8.5	7.5	25.5	16.0	23.0	29.0	29.0	32.5	25.5
10	---	17.0	---	10.0	7.0	25.0	22.0	27.0	---	32.0	30.0	26.5
11	25.0	15.5	7.5	11.0	7.0	24.0	23.0	27.0	30.0	30.0	31.0	27.0
12	27.0	---	5.0	11.0	7.5	21.0	25.5	28.0	30.0	30.0	30.0	27.0
13	27.0	23.0	4.0	11.5	12.0	20.5	27.0	28.0	28.0	29.0	30.0	26.0
14	23.5	22.5	5.5	13.5	12.5	16.5	21.0	27.5	30.0	31.0	32.0	27.0
15	22.0	18.0	6.0	14.0	17.0	22.0	20.0	28.0	30.5	32.0	33.0	28.0
16	22.0	17.5	6.0	14.0	17.0	22.0	23.0	25.5	31.0	31.0	31.5	28.0
17	---	19.5	8.0	16.0	20.0	22.0	24.0	19.5	28.5	30.0	31.0	27.5
18	24.0	21.0	6.5	15.0	20.0	18.5	24.0	22.5	27.0	32.0	32.5	28.0
19	23.0	---	7.5	14.0	22.0	15.5	22.5	25.0	26.5	32.0	33.0	28.0
20	22.5	---	8.0	16.0	22.0	18.0	24.0	25.5	28.5	33.0	34.0	28.0
21	22.0	---	8.0	15.0	17.0	23.0	24.0	27.5	30.5	28.0	33.0	27.5
22	---	---	8.0	14.0	18.0	22.0	25.0	29.5	30.0	29.0	31.0	27.0
23	24.0	---	7.5	14.0	17.0	21.5	25.0	30.0	30.0	32.5	29.5	---
24	24.0	---	---	14.0	22.0	---	25.0	28.0	---	34.0	27.0	27.5
25	24.0	---	---	---	17.0	---	25.0	25.0	28.0	36.0	26.5	27.5
26	22.5	20.5	---	---	19.5	---	27.0	25.0	30.5	35.0	26.5	27.5
27	22.0	16.0	---	10.0	20.0	---	25.0	25.0	32.0	34.0	27.0	27.5
28	---	15.5	11.0	14.5	20.0	---	27.0	25.5	33.0	34.5	24.0	21.5
29	---	---	11.0	16.0	---	22.5	---	---	33.0	34.0	23.0	25.5
30	19.0	---	15.0	16.0	---	---	24.0	23.0	32.5	34.0	24.0	---
31	18.5	---	---	19.0	---	---	---	22.5	---	34.5	25.0	---
MEAN	22.0	18.5	9.5	13.0	16.0	21.0	24.0	25.5	29.0	31.5	30.5	26.5

08127000 ELM CREEK AT BALLINGER, TX

LOCATION.--Lat 31°44'57", long 99°56'51", Runnels County, Hydrologic Unit 12090101, on right bank 1,000 ft upstream from storage dam at Ballinger and 1.9 mi upstream from mouth.

DRAINAGE AREA.--450 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1932 to current year.

REVISED RECORDS.--WSP 1442: 1935, 1946, 1954. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and masonry dam control. Datum of gage is 1,617.72 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good except those below 100 ft³/s, which are fair. Stage-discharge relation during periods of low flow are affected by wind action and occasional accumulation of drift on dam. The city of Winters diverts water for municipal use from Lake Winters (capacity, 8,374 acre-ft at elevation 1,790 ft). Prior to June 1982, capacity of Lake Winters (old) was 3,060 acre-ft.

AVERAGE DISCHARGE.--54 years (water years 1933-86), 45.1 ft³/s (1.36 in/yr), 32,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s Oct. 13, 1957 (gage height, 14.20 ft, from floodmark); no flow at times.

Highest stage, not affected by backwater from the Colorado River since at least 1904, was that of Oct. 13, 1957, from information by local residents.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1906 reached a stage of 14.5 ft, affected by backwater from Colorado River.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,930 ft³/s June 6 at 0230 hours (gage height, 6.45 ft, from floodmark); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.2	.51	.45	.49	.51	.28	.00	90	3.1	.00	409
2	.00	2.5	.32	.49	.80	.49	.26	.00	50	2.7	.00	227
3	.00	1.5	.27	.46	8.8	.58	.28	.00	2260	2.3	.00	213
4	.00	1.1	.31	.46	6.7	.63	.27	.00	732	5.4	.00	62
5	.00	.98	.32	.32	4.1	.63	.24	.00	1520	20	.00	57
6	.00	1.1	.37	.35	4.5	.55	.23	.00	2560	20	.00	33
7	.00	.88	.46	.33	2.7	.56	.22	.14	743	12	.00	19
8	.00	.79	.52	.25	1.7	.54	.21	4.0	393	6.6	.00	17
9	.00	.80	.58	.30	1.4	.56	.21	1.9	303	4.4	.00	12
10	.00	.77	.63	.33	1.2	.52	.27	1.4	290	3.1	.00	10
11	.00	.63	.53	.36	1.2	.37	.67	.76	264	2.7	.00	11
12	.00	.62	.49	.41	1.3	.21	.65	.46	170	4.4	.00	9.9
13	.00	.64	.40	.40	1.2	.13	.50	.27	141	3.6	.00	9.0
14	.00	.65	.46	.43	1.3	.08	.32	.15	117	2.0	.00	6.2
15	.00	.68	.55	.45	1.1	.08	.19	.08	124	.70	.00	4.4
16	.00	.67	.59	.54	1.1	.05	.13	.04	96	.38	.00	4.0
17	.00	.62	.63	.55	1.0	.04	.08	1.8	68	.23	.00	3.4
18	806	.65	.75	.56	.95	.24	.05	2.2	63	.13	.00	3.0
19	249	.64	.73	.49	.94	.39	.04	1.1	133	.08	.00	1.9
20	35	.44	.76	.47	.87	.48	.02	.52	96	.04	.00	1.5
21	13	.36	.70	.46	.75	.49	.03	.27	78	.02	.00	1.4
22	5.5	.34	.74	.39	.65	.47	.03	.13	58	.00	.00	1.2
23	2.6	.36	.72	.37	.64	.43	.02	.07	33	.02	.00	1.0
24	1.8	.37	.60	.43	.62	.42	.01	.03	20	.24	.00	.92
25	1.4	.43	.49	.39	.69	.39	.00	.35	17	.56	.00	.80
26	14	.67	.48	.39	.77	.41	.00	.73	12	.45	.00	.70
27	17	.70	.48	.37	.75	.44	.00	.70	8.0	.20	.00	.62
28	8.3	.61	.46	.42	.61	.41	.00	.45	5.4	.08	366	.49
29	3.1	.55	.49	.48	---	.35	.00	14	4.4	.03	198	.43
30	1.6	.59	.50	.49	---	.32	.00	49	4.4	.00	35	.37
31	1.3	---	.47	.50	---	.30	---	455	---	.00	15	---
TOTAL	1159.60	23.84	16.31	13.09	48.83	12.07	5.21	535.55	10453.2	95.46	614.00	1121.23
MEAN	37.4	.79	.53	.42	1.74	.39	.17	17.3	348	3.08	19.8	37.4
MAX	806	2.5	.76	.56	8.8	.63	.67	455	2560	20	366	409
MIN	.00	.34	.27	.25	.49	.04	.00	.00	4.4	.00	.00	.37
CFSM	.08	.00	.00	.00	.00	.00	.00	.04	.77	.01	.04	.08
IN.	.10	.00	.00	.00	.00	.00	.00	.04	.86	.01	.05	.09
AC-FT	2300	47	32	26	97	24	10	1060	20730	189	1220	2220

CAL YR 1985 TOTAL 4379.16 MEAN 12.0 MAX 806 MIN .00 CFSM .03 IN. .36 AC-FT 8690
WTR YR 1986 TOTAL 14098.39 MEAN 38.6 MAX 2560 MIN .00 CFSM .09 IN. 1.17 AC-FT 27960

08127000 ELM CREEK AT BALLINGER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1957 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,220 microsiemens Sept. 12, 17, 1970; minimum daily, 244 microsiemens Aug. 4, 1978.
WATER TEMPERATURES: Maximum daily 35.0°C July 19, 1986; minimum daily, 0.0°C Jan. 8, 1968, Jan. 10, 13, 1973, and Jan. 11, 14, 1982.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,210 microsiemens May 7; minimum daily, 313 microsiemens June 3.
WATER TEMPERATURES: Maximum daily, 35.0°C July 19; minimum daily, 4.0°C Dec. 14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
NOV									
26...	1245	0.7	607	17.0	220	80	53	21	42
JAN									
10...	1120	0.33	1140	6.0	380	200	82	42	82
FEB									
20...	1015	0.89	2750	16.0	940	760	180	120	230
APR									
14...	1115	0.32	3050	21.0	960	780	170	130	280
JUL									
15...	1250	0.4	1300	28.0	370	190	80	41	110

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV								
26...	1	5.8	139	66	79	0.3	8.2	360
JAN								
10...	2	6.3	181	160	170	0.3	7.0	660
FEB								
20...	3	6.6	187	550	520	0.5	3.5	1700
APR								
14...	4	7.6	176	550	630	0.6	5.5	1900
JUL								
15...	3	6.2	176	140	230	0.5	9.1	720

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1985	1159.60	677	391	1220	110	344	84	262	200
NOV.	1985	23.84	543	313	20	86	5.5	66	4.3	160
DEC.	1985	16.31	791	458	20	130	5.7	99	4.3	230
JAN.	1986	13.09	1310	769	27	230	8.2	170	6.1	390
FEB.	1986	48.83	2250	1340	177	450	59	320	42	690
MAR.	1986	12.07	2920	1760	57	620	20	430	14	900
APR.	1986	5.21	3050	1840	26	660	9.2	460	6.4	940
MAY	1986	535.55	710	416	601	130	183	94	135	210
JUNE	1986	10453.2	415	239	6730	65	1830	50	1420	120
JULY	1986	95.46	1520	895	231	280	71	200	52	460
AUG.	1986	614.00	347	199	330	53	88	42	69	100
SEPT	1986	1121.23	496	286	865	78	237	60	183	150
TOTAL		14098.39	**	**	10300	**	2870	**	2200	**
WTD.AVG.		39	460	271	**	75	**	58	**	140

08127000 ELM CREEK AT BALLINGER, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	481	666	1010	1670	2810	3010	---	590	900	---	379
2	---	478	669	1030	1690	2870	3020	---	512	902	---	418
3	---	496	670	1040	1700	2850	3000	---	313	904	---	634
4	---	498	677	1050	1910	2870	3030	---	380	1400	---	638
5	---	500	688	1070	2000	2880	3040	---	357	1740	---	600
6	---	506	686	1110	2130	2890	3050	---	345	1720	---	574
7	---	510	691	1120	2550	2900	3040	3210	409	1600	---	588
8	---	514	705	1120	2460	2900	3050	3140	441	1500	---	593
9	---	525	706	1130	2450	2910	3010	3130	475	1470	---	571
10	---	538	725	1140	2430	2900	3050	3120	568	1430	---	574
11	---	539	730	1160	2440	2900	3070	3110	506	1400	---	608
12	---	544	725	1220	2750	2920	3050	2950	503	1370	---	617
13	---	554	732	1240	2860	2930	3070	3070	504	1340	---	644
14	---	559	740	1260	2710	2940	3050	3080	519	1330	---	678
15	---	567	745	1280	2700	2930	3080	3090	562	1320	---	710
16	---	570	746	1320	2690	2940	3090	3080	600	1310	---	783
17	---	577	762	1350	2700	2950	3100	2090	605	1300	---	785
18	800	587	776	1360	2720	2930	3110	2020	636	1310	---	790
19	385	592	778	1380	2730	2910	3100	2490	792	1300	---	818
20	365	600	836	1400	2740	2930	3120	2930	1640	1390	---	846
21	405	607	845	1420	2750	2950	3110	2920	1110	1400	---	890
22	438	619	843	1430	2760	2930	3120	2930	960	---	---	918
23	447	626	846	1440	2780	2950	3130	2940	894	1420	---	941
24	446	624	870	1460	2790	2950	3150	2960	872	1340	---	982
25	445	629	867	1490	2820	2960	---	2870	880	1290	---	990
26	448	607	863	1500	2800	2970	---	2680	878	1280	---	1010
27	455	615	894	1530	2820	2950	---	2870	876	1280	---	1040
28	467	646	910	1540	2840	2970	---	2880	866	1300	322	1080
29	475	652	918	1580	---	2980	---	2420	875	1330	376	1100
30	480	653	980	1600	---	2970	---	2260	1100	---	413	1100
31	528	---	987	1630	---	3000	---	410	---	---	434	---
MEAN	470	567	783	1300	2510	2920	3070	2750	686	1340	386	763

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	18.0	14.0	9.0	14.0	14.0	22.0	---	25.0	29.0	---	25.0
2	---	19.0	9.0	10.0	15.0	23.0	23.0	---	28.0	32.0	---	27.0
3	---	19.0	10.0	11.0	15.0	17.0	24.0	---	25.0	30.0	---	26.0
4	---	20.0	11.0	9.0	16.0	18.0	24.0	---	26.0	28.0	---	27.0
5	---	18.0	10.0	10.0	15.0	18.0	24.0	---	25.0	30.0	---	26.0
6	---	18.0	13.0	9.0	16.0	19.0	25.0	---	26.0	30.0	---	27.0
7	---	19.0	13.0	6.0	14.0	19.0	25.0	---	26.0	30.0	---	25.0
8	---	18.0	13.0	5.0	11.0	17.0	24.0	24.0	27.0	31.0	---	25.0
9	---	20.0	14.0	9.0	8.0	19.0	20.0	24.0	27.0	28.0	---	26.0
10	---	17.0	11.0	11.0	8.0	20.0	20.0	22.0	28.0	31.0	---	27.0
11	---	17.0	7.0	9.0	9.0	19.0	20.0	26.0	25.0	30.0	---	28.0
12	---	20.0	7.0	11.0	7.0	18.0	24.0	25.0	30.0	30.0	---	27.0
13	---	20.0	5.0	10.0	8.0	17.0	26.0	24.0	29.0	30.0	---	27.0
14	---	20.0	4.0	12.0	12.0	19.0	22.0	26.0	27.0	30.0	---	28.0
15	---	17.0	9.0	14.0	15.0	19.0	21.0	25.0	30.0	31.0	---	29.0
16	---	16.0	9.0	13.0	14.0	21.0	19.0	25.0	27.0	29.0	---	30.0
17	---	18.0	9.0	14.0	18.0	19.0	23.0	20.0	27.0	30.0	---	29.0
18	23.0	20.0	8.0	13.0	17.0	18.0	24.0	25.0	27.0	28.0	---	28.0
19	22.0	19.0	6.0	15.0	17.0	15.0	24.0	23.0	20.0	35.0	---	30.0
20	22.0	15.0	11.0	14.0	18.0	20.0	25.0	25.0	28.0	29.0	---	29.0
21	20.0	15.0	12.0	13.0	14.0	19.0	24.0	24.0	30.0	---	---	29.0
22	21.0	18.0	14.0	14.0	15.0	19.0	23.0	25.0	28.0	---	---	30.0
23	22.0	19.0	12.0	15.0	15.0	19.0	22.0	30.0	30.0	---	---	30.0
24	28.0	18.0	10.0	15.0	18.0	17.0	---	25.0	30.0	32.0	---	29.0
25	22.0	20.0	9.0	12.0	20.0	17.0	---	27.0	28.0	32.0	---	24.0
26	21.0	20.0	9.0	13.0	18.0	18.0	---	---	28.0	31.0	---	27.0
27	24.0	15.0	7.0	13.0	17.0	23.0	---	24.0	30.0	34.0	---	29.0
28	21.0	14.0	9.0	14.0	17.0	20.0	---	25.0	32.0	---	24.0	29.0
29	21.0	16.0	13.0	14.0	---	20.0	---	26.0	32.0	---	23.0	27.0
30	18.0	15.0	11.0	14.0	---	19.0	---	25.0	30.0	---	24.0	28.0
31	23.0	---	10.0	15.0	---	---	---	23.0	---	---	26.0	---
MEAN	22.0	18.0	10.0	12.0	14.5	18.5	23.0	24.5	27.5	30.5	24.5	27.5

08128000 SOUTH CONCHO RIVER AT CHRISTOVAL, TX

LOCATION.--Lat 31°11'15", long 100°30'06", Tom Green County, Hydrologic Unit 12090102, on left bank 1,000 ft downstream from U.S. Highway 277 bridge, 9.5 mi upstream from Twin Buttes Dam, and 24.7 mi upstream from mouth.

DRAINAGE AREA.--412.6 mi^2, of which 58.6 mi^2 probably is noncontributing.

PERIOD OF RECORD.--February 1930 to current year.

REVISED RECORDS.--WSP 1118: 1943(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,010.22 ft above National Geodetic Vertical Datum of 1929. Prior to July 17, 1930, nonrecording gage at same site and datum. July 17, 1930, to Nov. 15, 1977, water-stage recorder at site 160 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Low flow is materially affected by diversion to South Concho Irrigation Co.'s canal (station 08127500) 900 ft upstream from station. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--56 years, 31.8 ft^3/s (23,040 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft^3/s July 23, 1938 (gage height, 21.95 ft, from floodmark), from rating curve extended above 15,100 ft^3/s on basis of slope-area measurement of 80,100 ft^3/s; no flow Feb. 28, and Mar. 1, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1882, about 23 ft Aug. 6, 1906 (discharge, 115,000 ft^3/s), from rating curve extended as noted above, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 160 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 18	2400	1,850	5.46	June 4	0300	1,090	4.42
May 9	1700	*2,720	a*6.34	June 8	1730	1,280	4.70
May 26	1630	1,850	a 5.46	Aug. 11	1730	1,660	5.22

a From floodmark.

Minimum discharge, 4.0 ft^3/s May 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	21	18	13	9.7	6.9	6.9	6.3	23	52	30	24
2	6.3	22	18	12	9.7	6.9	6.6	6.3	21	55	29	25
3	6.3	24	18	12	9.7	6.9	6.3	6.3	140	53	25	24
4	5.6	25	17	11	9.7	6.9	6.3	6.2	374	52	25	23
5	5.1	25	17	10	9.7	6.6	6.3	5.7	53	46	26	23
6	5.1	26	17	10	9.7	6.3	6.3	5.5	41	45	26	24
7	5.1	26	17	10	9.7	6.3	6.3	4.5	40	45	26	24
8	5.1	26	17	11	9.7	6.6	6.9	4.6	322	44	26	24
9	5.1	26	17	11	9.9	6.9	6.9	473	330	42	26	24
10	5.1	26	17	11	10	6.9	6.9	137	64	41	26	24
11	5.1	26	17	11	10	6.8	7.3	19	50	39	376	23
12	5.1	27	17	11	9.9	6.9	7.6	12	50	39	169	22
13	5.1	28	17	11	9.7	6.9	7.6	12	50	39	37	22
14	5.0	25	17	10	9.7	6.9	7.1	12	49	39	33	21
15	5.4	21	17	10	9.7	6.9	6.9	13	47	38	31	21
16	5.7	21	17	9.8	9.4	6.9	6.9	13	47	37	31	21
17	5.7	24	17	9.7	9.0	6.6	6.9	17	55	36	30	19
18	76	24	16	9.7	9.0	8.4	6.9	11	60	35	25	18
19	487	23	16	9.7	9.0	6.7	6.7	11	60	35	25	18
20	26	21	16	9.9	9.0	7.0	6.3	11	56	35	25	18
21	15	21	16	10	9.0	7.6	6.8	8.8	55	35	24	18
22	17	21	16	10	9.0	7.6	6.7	7.6	54	35	22	18
23	20	21	16	10	9.0	7.6	6.3	7.6	54	36	22	18
24	20	21	16	10	9.0	7.6	7.9	7.6	54	37	22	18
25	22	18	16	10	8.8	7.1	8.0	11	52	37	21	18
26	24	18	16	10	8.3	6.9	7.6	364	52	36	21	17
27	24	18	16	10	7.3	7.3	7.6	124	52	35	21	17
28	24	18	16	10	6.9	7.6	7.3	27	53	35	21	17
29	25	18	15	10	---	7.9	6.6	22	54	32	22	17
30	24	18	13	9.7	---	8.3	6.3	24	52	31	22	15
31	21	---	13	9.7	---	7.4	---	25	---	30	22	---
TOTAL	917.2	679	509	322.2	259.2	220.1	207.0	1415.0	2464	1226	1287	615
MEAN	29.6	22.6	16.4	10.4	9.26	7.10	6.90	45.6	82.1	39.5	41.5	20.5
MAX	487	28	18	13	10	8.4	8.0	473	374	55	376	25
MIN	5.0	18	13	9.7	6.9	6.3	6.3	4.5	21	30	21	15
AC-FT	1820	1350	1010	639	514	437	411	2810	4890	2430	2550	1220

CAL YR 1985 TOTAL 4677.4 MEAN 12.8 MAX 487 MIN 4.0 AC-FT 9280
WTR YR 1986 TOTAL 10120.7 MEAN 27.7 MAX 487 MIN 4.5 AC-FT 20070

08128400 MIDDLE CONCHO RIVER ABOVE TANKERSLEY, TX

LOCATION.--Lat 31°25'38", long 100°42'39", Irion County, Hydrologic Unit 12090103, on left bank 0.3 mi upstream from East Rocky Creek, 0.5 mi southwest of Tullos Ranch Headquarters, 6.7 mi northwest of Tankersley, and 20.9 mi upstream from mouth.

DRAINAGE AREA.--2,084 mi², of which 968 mi² probably is noncontributing.

PERIOD OF RECORD.--March 1961 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,986.47 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature were made during the year. Satellite telemeter located at station.

AVERAGE DISCHARGE.--25 years, 16.1 ft³/s (11,660 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft³/s Sept. 21, 1974 (gage height, 24.98 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 29.5 ft Sept. 26, 1936. A flood in 1900 reached the same stage, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 18	0530	6,060	17.50	Sept. 2	1330	7,960	19.23
June 2	1030	4,210	15.28	Sept. 5	2400	3,600	14.52
June 3	2300	*10,800	*21.68				

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	4.2	1.3	1.5	2.6	2.1	2.4	3.9	93	8.5	.05	.35
2	2.7	4.3	.94	1.6	3.3	3.2	2.5	2.2	1350	8.4	.01	3560
3	2.0	3.3	.93	1.6	5.3	2.9	2.6	1.6	5580	19	.00	1210
4	1.6	3.3	.94	1.7	6.3	2.6	2.6	.80	1790	9.2	.18	87
5	1.7	3.5	.92	1.4	6.9	2.4	2.6	.47	227	7.1	.03	522
6	1.9	4.0	.81	1.5	5.9	2.4	2.6	.37	128	6.4	.00	1010
7	2.3	4.2	.75	1.6	5.0	2.3	2.6	.29	193	5.9	.00	136
8	2.4	4.1	.69	1.9	4.3	2.2	3.2	.21	99	4.9	.00	35
9	2.5	3.9	.73	1.9	3.7	2.2	5.7	.22	271	4.2	.00	21
10	2.7	3.4	.85	2.1	3.2	2.0	4.2	3.1	102	3.7	.00	15
11	3.3	3.0	.90	2.1	3.0	2.0	4.4	.65	62	3.2	.04	12
12	3.0	2.6	.94	2.0	3.1	1.8	3.3	.92	45	1.6	.00	9.8
13	3.0	2.7	.97	2.1	2.9	1.9	2.7	.61	36	1.5	.00	8.6
14	3.8	2.8	.94	1.9	2.6	2.1	1.8	.37	29	1.4	.00	6.1
15	4.0	3.6	.85	2.1	2.6	2.6	1.5	.28	26	1.5	.00	3.5
16	4.1	3.9	.85	2.1	2.2	2.4	1.1	.23	24	1.3	.00	3.4
17	4.4	3.4	.90	1.8	2.2	2.4	1.0	.44	217	1.2	.00	3.1
18	1350	3.0	.94	1.6	2.2	2.7	.90	.37	49	1.0	.00	2.9
19	89	3.7	1.0	1.6	2.2	3.0	.90	.31	575	1.0	.00	2.6
20	23	3.1	1.0	1.6	2.2	3.0	.90	.24	150	.82	.00	2.4
21	13	2.3	1.0	1.6	2.1	3.0	.90	.17	52	.66	.00	2.2
22	9.5	1.9	1.0	1.5	2.0	3.0	.85	.11	35	1.1	.00	2.4
23	7.5	1.6	1.1	1.6	2.1	3.0	.59	.07	26	1.5	.00	2.5
24	5.7	1.5	1.1	2.3	2.1	3.0	.52	.02	22	2.4	.00	2.6
25	4.9	1.1	1.2	2.5	2.2	3.0	.67	1.3	18	5.9	.00	2.6
26	4.3	1.2	1.2	2.6	3.8	3.0	.72	.84	15	2.4	.00	2.4
27	3.9	1.2	1.3	2.7	2.2	3.1	.75	243	14	1.2	111	2.7
28	3.7	1.2	1.3	2.5	2.2	2.7	.93	39	12	.52	47	2.8
29	3.3	.97	1.3	2.4	---	2.6	1.3	9.5	11	.28	4.7	3.1
30	3.0	1.4	1.4	2.1	---	2.3	108	11	9.9	.11	1.8	3.4
31	2.6	---	1.5	2.4	---	2.4	---	120	---	.07	.54	---
TOTAL	1573.3	84.37	31.55	59.9	90.4	79.3	164.73	442.59	11260.9	107.96	165.35	6677.45
MEAN	50.8	2.81	1.02	1.93	3.23	2.56	5.49	14.3	375	3.48	5.33	223
MAX	1350	4.3	1.5	2.7	6.9	3.2	108	243	5580	19	111	3560
MIN	1.6	.97	.69	1.4	2.0	1.8	.52	.02	9.9	.07	.00	.35
AC-FT	3120	167	63	119	179	157	327	878	22340	214	328	13240

CAL YR 1985 TOTAL 3005.19 MEAN 8.23 MAX 1350 MIN .00 AC-FT 5960
WTR YR 1986 TOTAL 20737.80 MEAN 56.8 MAX 5580 MIN .00 AC-FT 41130

08129300 SPRING CREEK ABOVE TANKERSLEY, TX

LOCATION.--Lat 31°19'48", long 100°38'24", Tom Green County, Hydrologic Unit 12090102, on right bank at downstream side of bridge on Farm Road 2335, 1.4 mi south of Tankersley, 2.5 mi upstream from Dove Creek, and 10.4 mi upstream from mouth.

DRAINAGE AREA.--424.7 mi², of which 19.7 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,964.72 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 10, 1960, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Many small diversions above station for irrigation. Several observations of water temperature were made during the year. Satellite telemeter located at station.

AVERAGE DISCHARGE.--26 years, 12.8 ft³/s (9,270 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,400 ft³/s Aug. 12, 1971 (gage height, 16.57 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Outstanding floods since at least 1853 occurred in 1882 and 1884. Flood of Oct. 3, 1959, reached a stage of 18.4 ft, from floodmarks. At former gage near Tankersley 8 mi downstream, the flood of Oct. 3, 1959, had a discharge of 82,100 ft³/s and was found to be about 3 ft lower than the 1882 flood, the greatest at that location since at least 1853.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 2	1130	*3,450	*7.85	No other peak greater than base discharge.			

Minimum daily discharge, 0.01 ft³/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	8.4	4.5	1.4	8.5	2.1	.14	.07	.07	2.2	.03	4.4
2	4.7	7.7	4.4	1.2	10	1.6	.14	.05	30	2.0	.03	382
3	4.9	7.6	4.8	.99	12	1.3	.16	.04	126	1.7	.03	35
4	4.4	7.2	5.4	1.0	11	1.8	.28	.05	50	1.1	.03	18
5	3.6	4.4	5.0	.90	11	1.7	.30	.04	14	.91	.03	47
6	3.8	3.1	5.3	2.1	9.2	1.0	.25	.04	18	.82	.03	90
7	4.1	4.0	5.0	2.8	9.3	.66	.16	.04	40	.76	.03	37
8	4.1	6.4	4.6	4.6	8.6	.67	.14	.04	26	.53	.02	31
9	4.4	7.2	4.7	6.5	9.6	.64	.12	.08	18	.30	.02	29
10	6.5	6.7	3.4	7.9	9.4	.50	.12	.13	12	.19	.02	29
11	5.4	6.7	1.8	7.8	9.0	.79	.11	.09	14	.15	.06	23
12	5.1	7.7	1.6	7.4	9.2	1.5	.11	.07	11	.12	.05	17
13	4.9	7.9	4.3	7.3	10	.51	.10	.05	9.1	.10	.04	16
14	5.0	7.8	5.1	4.9	9.2	.40	.09	.05	8.4	.09	.03	14
15	4.9	7.2	5.9	4.2	9.2	.28	.07	.04	8.1	.08	.02	12
16	5.4	7.7	6.2	4.2	9.3	.26	.07	.04	7.5	.08	.02	11
17	5.7	8.2	4.3	2.6	7.1	.24	.07	.06	9.8	.07	.02	9.6
18	9.3	8.3	3.7	1.4	8.1	.38	.07	.07	73	.06	.02	9.4
19	7.3	7.2	3.5	1.7	6.5	.31	.08	.05	57	.05	.02	12
20	6.8	5.9	3.5	5.2	6.4	.24	.08	.04	21	.05	.02	12
21	5.8	6.2	5.2	5.5	4.1	.21	.08	.03	14	.05	.01	12
22	6.0	7.2	6.2	4.7	4.3	.19	.07	.03	12	.05	.02	12
23	6.7	7.3	5.8	3.5	5.7	.17	.06	.03	9.8	.06	.02	12
24	6.5	6.9	6.0	2.6	5.7	.17	.06	.03	9.0	.05	.02	12
25	39	7.3	6.2	1.4	6.3	.17	.06	.06	8.7	.05	.03	11
26	16	7.4	6.6	.99	6.4	.16	.06	.10	8.4	.04	.03	8.8
27	7.9	6.9	6.0	.79	4.5	.16	.06	.07	8.6	.04	.04	9.0
28	7.1	6.9	5.5	4.0	2.5	.16	.06	.06	6.5	.04	.06	9.0
29	7.6	5.8	3.6	3.3	---	.15	.06	.05	4.3	.03	.05	12
30	6.8	4.9	3.6	1.9	---	.13	.06	.10	3.2	.03	.03	8.4
31	6.4	---	2.5	4.3	---	.14	---	.09	---	.03	1.5	---
TOTAL	220.5	204.1	144.2	109.07	222.1	18.69	3.29	1.79	637.47	11.83	2.38	944.6
MEAN	7.11	6.80	4.65	3.52	7.93	.60	.11	.06	21.2	.38	.08	31.5
MAX	39	8.4	6.6	7.9	12	2.1	.30	.13	126	2.2	1.5	382
MIN	3.6	3.1	1.6	.79	2.5	.13	.06	.03	.07	.03	.01	4.4
AC-FT	437	405	286	216	441	37	6.5	3.6	1260	23	4.7	1870

CAL YR 1985	TOTAL	1816.85	MEAN	4.98	MAX	102	MIN	.06	AC-FT	3600
WTR YR 1986	TOTAL	2520.02	MEAN	6.90	MAX	382	MIN	.01	AC-FT	5000

08130500 DOVE CREEK AT KNICKERBOCKER, TX

LOCATION.--Lat 31°16'24", long 100°37'45", Tom Green County, Hydrologic Unit 12090102, on right bank at right end of bridge on Farm Road 2335, 0.4 mi west of Knickerbocker, and 5.7 mi upstream from mouth.

DRAINAGE AREA.--226.43 mi², of which 8.43 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,001.45 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 10, 1960, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Nov. 6-24. Records good except for estimated daily discharges which are fair. Flow is partly regulated by storage, by diversion from two small channel dams upstream, and also by small upstream diversion (for irrigation). Several observations of water temperature were made during the year. Satellite telemeter located at station.

AVERAGE DISCHARGE.--26 years, 16.6 ft³/s (12,030 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft³/s Aug. 12, 1971 (gage height, 20.66 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, 30.4 ft in 1906 and Oct. 3, 1959; floods in 1882 and 1884 reached about the same stage, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 18	1400	*1,200	*8.70	June 4	0130	1,180	8.66
May 26	1700	255	5.77	June 18	1900	141	4.85

Minimum daily discharge, 0.67 ft³/s Apr. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	13	12	8.1	3.9	7.3	2.4	5.5	11	7.1	3.9	10
2	8.8	14	12	8.0	4.0	7.0	2.2	5.3	14	7.6	4.7	12
3	8.5	13	12	7.8	4.0	6.9	2.6	5.7	20	8.3	4.7	9.9
4	8.0	13	11	7.2	4.0	7.2	5.2	6.1	111	8.4	6.3	7.2
5	7.6	12	11	7.0	4.0	7.2	5.4	5.9	14	8.6	6.3	8.6
6	7.8	12	11	7.3	4.1	7.3	5.3	5.5	14	7.7	5.4	16
7	7.6	12	10	7.6	4.2	6.8	4.6	4.9	19	7.9	5.5	9.9
8	7.4	12	10	7.6	4.2	4.3	4.5	4.5	17	8.1	5.6	8.7
9	7.0	12	10	7.2	4.2	5.1	3.9	4.9	16	8.3	5.7	8.5
10	7.3	12	9.8	7.3	4.2	4.5	3.1	7.0	15	7.8	8.3	8.3
11	7.6	12	9.5	7.3	4.2	4.2	2.8	5.7	15	8.2	11	7.7
12	6.9	12	9.4	7.2	4.4	5.8	2.6	4.6	15	8.2	9.7	7.1
13	7.0	12	9.4	6.2	5.0	7.7	2.4	3.6	13	8.1	8.6	6.7
14	7.3	12	9.4	5.7	7.2	8.2	2.0	2.4	9.5	8.0	8.0	7.0
15	8.4	12	9.1	5.5	7.6	8.6	1.9	1.5	8.9	7.4	7.3	7.1
16	8.2	12	9.1	5.5	7.6	4.9	1.8	1.1	8.6	7.8	5.3	6.8
17	8.3	12	9.1	5.5	7.9	3.5	1.5	1.0	13	7.0	4.9	5.3
18	285	12	8.8	4.3	7.9	2.4	1.2	1.6	34	4.7	4.8	3.0
19	104	12	8.4	3.6	7.9	2.0	1.1	1.8	31	4.3	4.6	2.5
20	23	12	8.6	3.6	7.6	3.3	.67	1.1	16	3.9	4.4	2.8
21	17	12	8.5	3.6	7.4	4.0	.92	.95	15	4.1	3.9	3.6
22	17	12	8.6	3.7	7.3	4.4	.87	.77	14	5.5	5.2	3.8
23	17	12	8.5	3.8	7.5	3.8	.93	.68	14	5.2	4.9	3.9
24	17	12	8.8	3.8	7.6	2.7	1.3	.68	13	6.6	5.2	3.9
25	16	12	8.5	3.8	7.6	1.5	1.5	.76	12	6.9	7.1	3.5
26	15	12	8.5	3.8	7.5	2.0	2.8	52	8.4	4.8	8.9	3.5
27	15	12	8.5	3.9	7.2	3.8	3.6	31	7.6	4.3	8.6	3.8
28	14	12	8.5	4.0	7.3	4.7	4.5	7.7	7.5	3.9	9.4	4.0
29	15	12	8.5	4.0	---	4.3	5.0	4.9	7.3	3.8	9.1	3.7
30	14	12	8.3	3.8	---	3.2	5.5	29	7.1	3.9	8.5	3.5
31	13	---	8.2	3.8	---	2.8	---	13	---	3.7	8.6	---
TOTAL	713.9	365	293.0	171.5	167.5	151.4	84.09	221.14	520.9	200.1	204.4	192.3
MEAN	23.0	12.2	9.45	5.53	5.98	4.88	2.80	7.13	17.4	6.45	6.59	6.41
MAX	285	14	12	8.1	7.9	8.6	5.5	52	111	8.6	11	16
MIN	6.9	12	8.2	3.6	3.9	1.5	.67	.68	7.1	3.7	3.9	2.5
AC-FT	1420	724	581	340	332	300	167	439	1030	397	405	381

CAL YR 1985 TOTAL 3835.3 MEAN 10.5 MAX 285 MIN 2.8 AC-FT 7610
WTR YR 1986 TOTAL 3285.23 MEAN 9.00 MAX 285 MIN .67 AC-FT 6520

08131200 TWIN BUTTES RESERVOIR NEAR SAN ANGELO, TX

LOCATION.--Lat 31°22'55", long 100°32'17", Tom Green County, Hydrologic Unit 12090102, in outlet control tower at Twin Buttes Dam on Middle Concho River, Spring Creek, and South Concho River, 3.8 mi upstream from Lake Nasworthy Dam, 8.1 mi southwest of San Angelo, and 75.0 mi upstream from mouth.

DRAINAGE AREA.--3,868 mi², of which 1,055 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder on Middle Concho-Spring Creek pool and nonrecording gage on South Concho pool. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rolled earthfill dam 8.1 mi long, including a 200-foot-wide uncontrolled off-channel concrete gravity spillway with ogee weir section. Outlet works consist of three 15.5-foot concrete conduits, each controlled by a 12.0- by 15.0-foot fixed-wheel gate and a 12.0- by 15.0-foot radial gate, located in the Middle Concho-Spring Creek pool. Low-flow releases are made through 2.0- by 2.0-foot gates located in the center of three fixed-wheel gates. The South Concho and Middle Concho-Spring Creek pools are connected by a 3.22-mile equalizing channel. At an elevation of 1,926.5 ft, the two pools join to form one lake. Below elevation 1,926.5 ft, daily contents are obtained from capacity tables for South Concho and Middle Concho-Spring Creek pools and summed to obtain combined daily contents. Lake level elevations below 1,926.5 ft represent Middle Concho-Spring Creek pool only. Deliberate impoundment of water began on Dec. 1, 1962; dam was completed Feb. 13, 1963. Capacity curve is based on a survey made in 1958. Reservoir was built for flood control, irrigation, and municipal uses. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	1,991.0	-
Crest of spillway...	1,969.1	640,600
Top of conservation storage.......................................	1,940.2	186,200
Bottom of equalizing channel (Middle Concho-Spring Creek pool).......	1,926.5	86,480
Dead storage in South Concho pool..................................	1,926.5	5,440
Lowest gated outlet (invert at Middle Concho-Spring Creek pool)......	1,885.0	3,750

COOPERATION.--Capacity curve furnished by the U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 205,200 acre-ft May 12, 1975 (elevation, 1,942.20 ft); minimum since first appreciable storage, 2,120 acre-ft Apr. 15, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum combined daily contents, 59,640 acre-ft Sept. 15,17; minimum, 18,210 acre-ft Oct. 8, 9.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18300	23870	24420	24900	24940	25360	24530	22260	24830	48360	44270	42770
2	18310	23930	24410	24910	24960	25340	24490	22190	26930	48340	44080	50410
3	18340	23960	24460	24930	25050	25320	24440	22130	34270	48310	43960	54140
4	18310	23990	24450	24900	25100	25310	24380	22070	41860	48230	43770	54500
5	18300	24040	24490	24900	25190	25280	24330	22010	42970	48180	43610	55510
6	18280	24030	24510	24950	25230	25260	24270	21970	43160	48090	43450	58610
7	18240	24040	24510	24910	25260	25230	24220	21920	43530	47980	43270	59060
8	18210	24090	24520	24940	25290	25230	24140	21820	44120	47810	43070	59290
9	18210	24100	24530	24980	25320	25230	24020	21840	44970	47620	42860	59360
10	18240	24110	24530	25010	25350	25200	23980	22670	45460	47470	42720	59480
11	18230	24130	24520	25050	25390	25160	23910	22860	45570	47290	42830	59530
12	18240	24180	24510	25080	25420	25080	23840	22830	45790	47140	43310	59550
13	18230	24210	24510	25110	25530	25030	23780	22820	45840	46960	43370	59590
14	18240	24240	24540	25130	25530	25000	23680	22810	45850	46820	43370	59600
15	18220	24250	24560	25100	25570	25010	23580	22760	45820	46710	43240	59640
16	18220	24280	24590	25100	25600	25000	23460	22740	45260	46540	43120	59620
17	18220	24290	24640	25110	25610	25040	23370	22750	45660	46400	42980	59640
18	21410	24300	24650	25100	25620	25030	23270	22710	46160	46250	42970	59590
19	22670	24300	24670	25090	25600	24990	23170	22650	47280	46100	42820	59570
20	23160	24310	24680	25080	25550	24960	23100	22600	48200	46000	42680	59560
21	23290	24320	24680	25060	25540	24920	23000	22550	48410	45940	42520	59550
22	23330	24330	24700	25040	25540	24900	22930	22510	48540	45960	42410	59540
23	23370	24350	24700	25030	25470	24880	22810	22420	48600	45840	42240	59520
24	23370	24380	24720	25030	25430	24850	22710	22320	48640	45720	42100	59450
25	23510	24390	24720	25000	25440	24840	22650	22590	48710	45600	42040	59430
26	23730	24410	24720	24990	25440	24790	22570	22680	48750	45510	42020	59360
27	23760	24430	24750	24990	25420	24740	22470	23470	48720	45340	42090	59350
28	23780	24430	24770	24980	25390	24700	22380	23750	48650	45180	42290	59350
29	23800	24440	24810	24930	---	24670	22250	23820	48590	44920	42340	59350
30	23820	24450	24850	24920	---	24640	22270	24450	48480	44710	42340	59310
31	23840	---	24870	24950	---	24580	---	24630	---	44480	42490	---
MAX	23840	24450	24870	25130	25620	25360	24530	24630	48750	48360	44270	59640
MIN	18210	23870	24410	24900	24940	24580	22250	21820	24830	44480	42020	42770
(†)	1900.77	1901.04	1901.24	1901.40	1901.47	1901.02	1899.74	1900.55	1913.13	1911.50	1910.56	1917.26
(‡)	+5570	+610	+420	+80	+440	-810	-2310	+2360	+23850	-4000	-1990	+16820

CAL YR 1985 MAX 25600 MIN 16560 (‡) +4180
WTR YR 1986 MAX 59640 MIN 18210 (‡) +41040

(†) Elevation, in feet, at end of month.
(‡) Change in contents, in acre-feet

08131400 PECAN CREEK NEAR SAN ANGELO, TX

LOCATION.--Lat 31°18'32", long 100°26'44", Tom Green County, Hydrologic Unit 12090102, on left bank 200 ft upstream from U.S. Highway 277, 3.7 mi upstream from mouth, and 10.5 mi south of San Angelo.

DRAINAGE AREA.--81.1 mi^2.

PERIOD OF RECORD.--June 1961 to September 1986 (discontinued).

REVISED RECORDS.--WDR TX-75-3: 1971, 1972(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder, crest-stage gages, and concrete control. Datum of gage is 1,930.72 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 30, 1968, at site 1.2 mi downstream at datum 20.21 ft lower.

REMARKS.--No estimated daily discharges. Records good except for those below 5 ft^3/s, which are fair. No known diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--25 years, 2.09 ft^3/s (0.35 in/yr), 1,510 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft^3/s Sept. 8, 1980 (gage height, 10.63 ft); maximum gage height, 11.15 ft Sept. 24, 1964, site and datum then in use; no flow most of time each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1908, 14.36 ft, former site and datum, Sept. 15, 1936 (discharge, 30,500 ft^3/s, by slope-area measurement).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 25	1200	206	1.20	June 8	1600	*218	*1.21

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.16	.00	.05	.00	.00	.09	3.8	.00	.00
2	.00	.00	.00	.18	.00	.00	.00	.00	11	3.8	.00	.00
3	.00	.00	.00	.20	.00	.00	.00	.00	19	3.8	.00	.00
4	.00	.00	.00	.22	.01	.00	.00	.00	23	3.8	.00	.00
5	.00	.00	.00	.24	.01	.00	.00	.00	7.8	3.4	.00	.00
6	.00	.00	.00	.25	.39	.00	.00	.00	8.6	2.7	.00	.00
7	.00	.00	.00	.25	.40	.00	.00	.00	4.1	2.7	.00	.00
8	.00	.00	.00	.25	.40	.00	.00	.00	37	2.7	.00	.00
9	.00	.00	.00	.22	.41	.00	.00	.00	11	2.7	.00	.00
10	.00	.00	.00	.20	.41	.00	.00	4.8	4.0	2.5	.00	.00
11	.00	.00	.00	.18	.42	.00	.00	.00	3.8	2.0	.00	.00
12	.00	.00	.00	.16	.42	.00	.00	.00	3.8	1.0	.00	.00
13	.00	.00	.00	.14	.43	.00	.00	.00	3.8	.50	.00	.00
14	.00	.00	.00	.12	.00	.00	.00	.00	3.8	.10	.00	.00
15	.00	.00	.00	.10	.00	.00	.00	.00	3.8	.10	.00	.00
16	.00	.00	.00	.10	.05	.00	.00	.00	3.8	.08	.00	.00
17	.00	.00	.00	.08	.10	.00	.00	3.6	3.8	.00	.00	.00
18	.00	.00	.00	.06	.12	.00	.00	.82	3.8	.00	.00	.00
19	.00	.00	.00	.04	.14	.00	.00	.00	3.8	.00	.00	.00
20	.00	.00	.00	.02	.30	.00	.00	.00	3.8	.00	.00	.00
21	.00	.00	.00	.01	.30	.00	.00	.00	3.8	.00	.00	.00
22	.00	.00	.00	.01	.30	.00	.00	.00	3.8	.00	.00	.00
23	.00	.00	.01	.01	.36	.00	.00	.00	3.4	.00	.00	.00
24	.00	.00	.02	.00	.20	.00	.00	.00	2.7	.06	.00	.00
25	25	.00	.04	.00	.15	.00	.00	.00	2.7	.10	.00	.00
26	1.1	.00	.06	.00	.10	.00	.00	.00	2.7	.06	.00	.00
27	.00	.00	.08	.00	.09	.00	.00	.00	3.0	.00	.00	.00
28	.00	.00	.10	.00	.10	.00	.00	.00	3.8	.00	.00	.00
29	.00	.00	.10	.00	---	.00	.00	.00	3.8	.00	.00	.00
30	.00	.00	.12	.00	---	.00	.00	.35	3.8	.00	.00	.00
31	.00	---	.14	.00	---	.00	---	.10	---	.00	.00	---
TOTAL	26.10	.00	.67	3.20	5.61	.05	.00	9.67	197.09	35.90	.00	.00
MEAN	.84	.00	.02	.10	.20	.00	.00	.31	6.57	1.16	.00	.00
MAX	25	.00	.14	.25	.43	.05	.00	4.8	37	3.8	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00
CFSM	.01	.00	.00	.00	.00	.00	.00	.00	.08	.01	.00	.00
IN.	.01	.00	.00	.00	.00	.00	.00	.00	.09	.02	.00	.00
AC-FT	52	.00	1.3	6.3	11	.1	.00	19	391	71	.00	.00

CAL YR 1985 TOTAL 228.43 MEAN .63 MAX 29 MIN .00 CFSM .01 IN. .10 AC-FT 453
WTR YR 1986 TOTAL 278.29 MEAN .76 MAX 37 MIN .00 CFSM .01 IN. .13 AC-FT 552

08132000 LAKE NASWORTHY NEAR SAN ANGELO, TX

LOCATION.--Lat 31°23'19", long 100°28'41", Tom Green County, Hydrologic Unit 12090102, on left bank 250 ft upstream from Nasworthy Dam on South Concho River, 3.8 mi downstream from Twin Buttes Dam, 6.0 mi southwest of San Angelo, and 68.9 mi upstream from mouth.

DRAINAGE AREA.--3,975 mi², of which 3,868 mi² is above Twin Buttes Reservoir and 1,055 mi² probably is noncontributing.

PERIOD OF RECORD.--March 1930 to current year. Prior to October 1969, monthend contents only.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a 6,090-foot dam with a 5,590-foot earthen section that has an earthen spillway 300 ft long, a concrete spillway 475 ft long with a bank of fifteen 25.0- by 18.0-foot tainter gates, and a 25.0- by 3.0-foot collapsible floodgate. The dam was completed and storage began Mar. 28, 1930. Since July 1966, West Texas Utilities Co. has operated a steam generating powerplant on the lake. Since September 1962, the lake has been almost totally controlled by releases or pumpage from Twin Buttes Reservoir (station 08131200). Siltation surveys in December 1938 and May 1953 by the Soil Conservation Service show that 1,191 acre-ft of silt was deposited from March 1930 to December 1938 and an additional 1,023 acre-ft was deposited from December 1938 to May 1953, totaling 2,214 acre-ft. Water is used for part of San Angelo municipal supply and for irrigation east of San Angelo. The capacity curve is based on a survey by the Soil Conservation Service in 1953 and has been used since 1955. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	43.5	-
Crest of spillway (300 ft)	39.1	27,810
Top of gates	33.2	13,990
Top of collapsible floodgate	32.2	12,390
Lowest outlet to canal (invert)	27.5	6,370
Crest of spillway (tainter gates sill)	15.3	435
Lowest gated outlet (invert)	-4.0	0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 26,900 acre-ft Sept. 15, 1936 (gage height, 38.36 ft); minimum, 209 acre-ft Aug. 22, 1964 (gage height, 13.21 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 11,510 acre-ft Sept. 5, 6 at 2400 hours (gage height, 31.65 ft); minimum, 9,660 acre-ft Mar. 3, Apr. 1 (gage height, 30.41 ft).

Capacity table (gage height, in feet, and total contents, in acre-feet)

30.4	9,650
31.7	11,590

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10010	10320	10090	9920	9920	9810	9660	9850	10330	9730	9910	10150
2	9980	10290	10060	9900	9950	9810	9700	9870	10370	9760	9910	11110
3	9950	10260	10050	9910	9980	9810	9710	9870	10430	9770	9920	11090
4	9880	10230	10010	9870	9980	9810	9710	9880	10470	9770	9970	11030
5	9870	10220	10010	9840	9990	9800	9730	9910	10470	9750	9980	11510
6	9840	10190	9980	9810	9980	9810	9730	9880	10470	9730	9990	11510
7	9850	10180	9980	9840	9940	9780	9760	9870	10430	9760	9980	11460
8	9810	10190	9990	9840	9910	9800	9750	9840	10530	9770	9980	11430
9	9830	10190	10010	9850	9900	9770	9750	9880	10580	9810	9980	11400
10	9840	10160	10010	9840	9880	9770	9770	10080	10400	9840	10020	11350
11	9830	10160	10010	9810	9870	9810	9780	10020	10360	9910	10050	11300
12	9810	10190	10010	9800	9840	9730	9780	9980	10330	9950	10010	11250
13	9800	10190	10010	9770	9840	9720	9770	9970	10290	9980	9970	11220
14	9830	10190	10010	9780	9810	9750	9760	9970	10250	10010	9920	11170
15	9810	10190	9990	9800	9800	9730	9770	9920	10190	9990	9910	11100
16	9800	10180	9980	9830	9770	9730	9840	9910	10160	9970	9870	11080
17	9830	10190	9980	9840	9770	9780	9850	9970	10120	9920	9830	11030
18	10410	10190	9970	9840	9770	9750	9840	9910	10110	9910	9780	10950
19	10400	10130	9980	9870	9770	9750	9840	9910	10060	9880	9770	10900
20	10390	10130	9980	9870	9770	9750	9830	9880	10020	9870	9750	10850
21	10370	10130	10010	9870	9770	9750	9830	9840	9980	9880	9780	10790
22	10370	10150	10010	9880	9800	9720	9830	9810	9910	9910	9810	10740
23	10360	10130	10010	9910	9810	9710	9810	9800	9870	9920	9830	10690
24	10360	10130	10020	9910	9810	9710	9800	9840	9810	9910	9840	10630
25	10410	10160	10020	9910	9830	9700	9830	10010	9770	9880	9870	10570
26	10410	10150	10040	9910	9830	9700	9840	10080	9710	9840	9850	10530
27	10400	10120	10010	9920	9800	9690	9830	10060	9710	9810	9940	10490
28	10360	10120	9990	9910	9800	9690	9840	10020	9720	9810	9940	10440
29	10320	10150	9980	9910	---	9670	9840	10020	9710	9850	9940	10400
30	10300	10120	9980	9910	---	9670	9850	10360	9710	9900	9940	10370
31	10300	---	9940	9910	---	9660	---	10330	---	9910	10020	---
MAX	10410	10320	10090	9920	9990	9810	9850	10360	10580	10010	10050	11510
MIN	9800	10120	9940	9770	9770	9660	9660	9800	9710	9730	9750	10150
(†)	30.88	30.75	30.62	30.60	30.52	30.41	30.56	30.90	30.45	30.60	30.68	30.93
(●)	+250	+50	+1250	-390	-480	-590	-160	+20	+90	+110	-210	+210

CAL YR 1985 MAX 11490 MIN 9450 (●) -1510
WTR YR 1986 MAX 11510 MIN 9660 (●) +320

(†) Gage height, in feet, at end of month.
(●) Change in contents, in acre-feet.

08134000 NORTH CONCHO RIVER NEAR CARLSBAD, TX

LOCATION.--Lat 31°35'33", long 100°38'12", Tom Green County, Hydrologic Unit 12090104, near left bank at downstream side of bridge on county road, 0.6 mi southeast of Carlsbad, 1.5 mi upstream from Mule Creek, 2.5 mi upstream from Grape Creek, 16.2 mi upstream from O. C. Fisher Dam, and 21.3 mi upstream from mouth.

DRAINAGE AREA.--1,266 mi^2, of which 75.1 mi^2 probably is noncontributing.

PERIOD OF RECORD.--March 1924 to current year.
Water-quality records: Chemical and biochemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WSP 1512: 1924(M), 1925, 1926(M), 1928, 1930, 1932(M), 1935, 1937-38(M), 1941(M), 1945(M), 1947-49(M). WRD TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,968.02 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 4, 1925, and Sept. 27, 1936, to Feb. 7, 1937, nonrecording gage; Feb. 4, 1925, to Sept. 26, 1936, and Feb. 8, 1937, to Nov. 6, 1955, water-stage recorder, all at site 2.5 mi upstream at datum 32.76 ft higher.

REMARKS.--No estimated daily discharges. Records good. There are several diversions (by pumping) upstream from station.

AVERAGE DISCHARGE.--62 years, 33.0 ft^3/s (23,910 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,600 ft^3/s Sept. 26, 1936 (gage height, 16.0 ft, at former site, 29.1 ft at present site, from floodmark), by slope-area measurement of peak flow former site; no flow at times.
Maximum stage since 1853, that of Sept. 26, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Stage unknown for major flood in June 1853.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 18	0500	3,540	12.28	Aug. 27	1330	*11,500	19.44
June 3	0700	6,780	15.82	Aug. 28	0900	9,220	17.88

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.2	2.6	2.6	1.9	23	64	.30	.00	110
2	.00	.00	.00	1.2	3.5	2.9	1.9	7.6	135	.24	.00	13
3	.00	.00	.00	1.3	8.9	2.9	1.7	3.8	3890	.14	.00	15
4	.00	.00	.00	1.3	8.5	2.6	1.7	2.1	267	.18	.00	14
5	.00	.00	.00	1.3	6.4	2.6	1.9	1.2	100	.03	.00	32
6	.00	.00	.00	1.5	4.8	2.9	1.9	.64	52	.00	.00	499
7	.00	.00	.00	1.5	3.8	2.9	1.7	.37	32	.00	.00	151
8	.00	.00	.00	1.5	3.5	2.9	1.7	.18	26	.00	.00	40
9	.00	.00	.00	4.2	3.2	2.9	1.5	.03	23	.00	.00	23
10	.00	.00	.00	1.7	3.2	2.9	1.3	93	40	.00	.00	15
11	.00	.00	.00	1.9	3.2	2.6	1.5	43	24	.00	.00	12
12	.00	.00	.00	2.8	3.2	2.4	1.9	13	16	.00	.00	8.9
13	.00	.00	.00	1.9	3.2	2.4	1.9	6.4	13	.00	.00	8.5
14	.00	.00	.00	2.4	3.2	2.6	1.7	3.8	11	.00	.00	8.0
15	.00	.00	.00	2.4	3.2	2.9	1.5	1.9	9.4	.00	.00	7.6
16	.00	.00	.00	2.6	3.2	3.2	1.2	.64	8.0	.00	.00	6.8
17	.00	.00	.00	2.1	3.2	3.2	.75	.45	302	.00	.00	6.4
18	422	.00	.03	2.1	3.2	3.	.64	.37	78	.00	.00	6.0
19	16	.00	.18	2.1	2.9	2.9	.54	.30	32	.00	.00	5.6
20	2.8	.00	.24	2.4	2.9	2.1	.75	.24	16	.00	.00	5.6
21	.45	.00	.30	2.6	2.6	2.1	.75	.14	12	.00	.00	5.2
22	.14	.00	.37	2.6	2.6	2.	.37	.04	10	.14	.00	4.8
23	.02	.00	.37	2.1	2.6	2.	.27	.00	7.2	.37	.00	4.8
24	.00	.00	.45	2.1	2.6	2.	.32	.00	6.4	.08	.00	4.5
25	.00	.00	.54	2.1	2.9	2.1	.10	.04	5.6	.01	.00	3.8
26	.00	.00	.64	2.1	2.9	2.	.03	360	4.1	.00	.00	3.8
27	.00	.00	.64	2.1	2.9	2.	.00	100	3.2	.00	3020	3.5
28	.00	.00	.75	2.4	2.9	2.	.00	43	1.5	.00	1940	3.5
29	.00	.00	.75	2.6	---	2.	.00	26	1.0	.00	72	3.5
30	.00	.00	.87	2.6	---	1.	13	21	.87	.00	18	3.5
31	.00	---	1.0	2.6	---	1.	---	261	---	.00	12	---
TOTAL	441.41	.00	7.13	65.3	101.8	79.	44.42	1013.24	5190.27	1.49	5062.00	1028.3
MEAN	14.2	.00	.23	2.11	3.64	2.5	1.48	32.7	173	.05	163	34.3
MAX	422	.00	1.0	4.2	8.9	3.	13	360	3890	.37	3020	499
MIN	.00	.00	.00	1.2	2.6	1.	.00	.00	.87	.00	.00	3.5
AC-FT	876	.00	14	130	202	15	88	2010	10290	3.0	10040	2040

CAL YR 1985 TOTAL 951.00 MEAN 2.61 MAX 42 MIN .00 AC-FT 1890
WTR YR 1986 TOTAL 13035.26 MEAN 35.7 MAX 38 MIN .00 AC-FT 25860

08134500 O. C. FISHER LAKE AT SAN ANGELO, TX

LOCATION.--Lat 31°29'04", long 100°28'53", Tom Green County, Hydrologic Unit 12090104, in intake structure of O. C. Fisher Dam on North Concho River, 3.1 mi northwest of San Angelo, and 6.6 mi upstream from mouth.

DRAINAGE AREA.--1,488 mi², of which 105 mi² probably is noncontributing.

PERIOD OF RECORD.--February 1952 to current year. Published as San Angelo Reservoir prior to October 1970, and as San Angelo Lake, October 1970 to September 1974.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 12, 1953, nonrecording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 40,885 ft long, including spillway. Closure was completed Mar. 7, 1951, and the dam was completed May 3, 1951. Deliberate impoundment began Feb. 1, 1952. The lake is operated for flood control and recreation with part as municipal supply for the city of San Angelo. The spillway is an uncontrolled off-channel concrete gravity dam with ogee weir section 1,150 ft wide located to the right and upstream from the right end of dam. The spillway is designed to discharge 356,000 ft³/s at maximum design flood level. The control outlet works consist of six gate-controlled outlets, 7.5 by 14.5 ft, opening into two 18.0-foot-diameter concrete conduits, and two 2.5-foot gate-controlled outlets for water-supply outlets. Since February 1973, the capacity is based on a survey made in 1962. Prior to 1973, the capacity was based on a survey made in 1944. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,964.0	-
Design flood	1,958.0	690,000
Crest of spillway	1,938.5	392,700
Top of conservation pool	1,908.0	115,700
Lowest gated outlet (invert)	1,840.0	0

COOPERATION.--Records furnished by the U.S. Army Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 174,100 acre-ft Oct. 14, 1957 (elevation, 1,916.47 ft); minimum since first appreciable storage, lake dry July 16, 1970, to Apr. 15, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 44,900 acre-ft Sept. 9 at 1600 hours (elevation, 1,889.38 ft); minimum daily, 7,510 acre-ft May 24 at 2400 hours (elevation, 1,866.59 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,866.0	7,100	1,876.0	17,160	1,886.0	36,260
1,871.0	11,190	1,881.0	25,480	1,890.0	46,620

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8840	9560	9090	8830	8720	8640	8390	7820	8840	17110	15550	42370
2	8820	9550	9090	8810	8710	8630	8380	7810	8920	17070	15500	42900
3	8790	9540	9060	8810	8710	8610	8380	7800	15960	17030	15460	42880
4	8760	9510	9050	8800	8710	8610	8370	7770	16710	16950	15410	42820
5	8740	9500	9020	8800	8700	8600	8370	7760	16900	16910	15360	43470
6	8720	9480	9020	8800	8690	8600	8350	7740	16950	16800	15310	44410
7	8710	9460	9010	8800	8690	8590	8340	7710	16950	16750	15260	44820
8	8700	9450	8990	8790	8690	8590	8340	7680	16980	16680	15180	44880
9	8690	9420	8990	8800	8690	8570	8330	7700	16980	16630	15160	44900
10	8680	9420	8980	8790	8680	8560	8320	7740	16950	16520	15130	44880
11	8660	9380	8970	8790	8680	8560	8310	7750	16950	16670	15100	44820
12	8650	9360	8960	8790	8680	8560	8290	7760	16930	16630	15050	44800
13	8650	9340	8940	8790	8680	8540	8290	7760	16900	16560	15020	44800
14	8650	9320	8920	8790	8680	8530	8280	7760	16840	16510	14960	44770
15	8640	9320	8920	8780	8680	8520	8280	7740	16790	16440	14930	44710
16	8640	9310	8920	8770	8670	8520	8270	7720	16800	16380	14880	44630
17	8640	9300	8900	8760	8660	8510	8250	7730	17150	16300	14830	44580
18	9600	9270	8890	8760	8660	8500	8250	7700	17440	16230	14800	44500
19	9680	9250	8890	8760	8660	8490	8230	7680	17620	16170	14740	44390
20	9700	9220	8880	8760	8650	8480	8220	7650	17630	16100	14650	44300
21	9700	9200	8880	8760	8650	8480	8210	7620	17590	16060	14620	44220
22	9700	9190	8880	8760	8650	8480	8190	7590	17560	16050	14560	44140
23	9690	9170	8870	8760	8650	8470	8180	7550	17540	16000	14510	44060
24	9680	9160	8860	8750	8640	8470	8170	7510	17480	15940	14480	43950
25	9670	9150	8860	3750	8640	8460	8160	7510	17410	15900	14460	43820
26	9660	9130	8850	8740	8640	8450	8060	7740	17380	15850	14450	43710
27	9660	9120	8850	8740	8640	8440	7970	7990	17330	15810	23010	43630
28	9650	9110	8840	8730	8640	8430	7920	8060	17300	15760	37020	43520
29	9610	9110	8840	8730	---	8420	7840	8080	17250	15710	37260	43440
30	9590	9110	8830	8720	---	8420	7840	8410	17180	15660	37190	43300
31	9570	---	8830	8720	---	8410	---	8680	---	15590	37170	---
MAX	9700	9560	9090	8830	8720	8640	8390	8680	17630	17110	37260	44900
MIN	8640	9110	8830	8720	8640	8410	7840	7510	8840	15590	14450	42370
(†)	1869.22	1869.67	1868.33	1868.20	1868.09	1867.80	1867.04	1868.14	1876.02	1874.82	1886.38	1888.79
(‡)	+690	-460	-280	-110	-80	-230	-570	+840	+8500	-1590	+21580	+6130

CAL YR 1985 MAX 14290 MIN 8390 (‡) -5390
WTR YR 1986 MAX 44900 MIN 7510 (‡) +34420

(†) Elevation, in feet, at end of month.
(‡) Change in contents, in acre-feet.

08135000 NORTH CONCHO RIVER AT SAN ANGELO, TX

LOCATION.--Lat 31°27'57", long 100°26'51", Tom Green County, Hydrologic Unit 12090104, near left bank at downstream side of pier of Sixth Street Bridge in San Angelo, 3.2 mi upstream from confluence with South Concho River, and 3.4 mi downstream from O. C. Fisher Dam.

DRAINAGE AREA.--1,525 mi², of which 75.1 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1915 to June 1928, February 1929 to September 1931, July 1947 to current year.
Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WSP 568: 1916, 1918-22. WSP 1512: 1916(M), 1917-18, 1919-21(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,813.42 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1920, nonrecording gage, and Sept. 1, 1920, to Feb. 11, 1929, water-stage recorder at site 1.6 mi downstream at datum 11.02 ft lower. Feb. 12, 1929, to Sept. 30, 1931, water-stage recorder at site 1.6 mi downstream at datum 13.02 ft lower.

REMARKS.--No estimated daily discharges. Records good. Since October 1951, flow regulated by O. C. Fisher Lake (station 08134500).

AVERAGE DISCHARGE.--17 years (water years 1917-27, 1930-31, 1948-51), prior to completion of O. C. Fisher Dam, 54.5 ft³/s (39,490 acre-ft/yr); 35 years (water years 1952-86) regulated, 7.94 ft³/s (5,750 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 47,000 ft³/s June 13, 1930 (gage height, 22.52 ft, site and and datum then in use); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 17, 1936, reached a stage of 34.6 ft, from floodmarks (discharge, 184,000 ft³/s), by slope-area measurement. The flood in 1936 was the greatest since flood in June 1853 (stage unknown).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 649 ft³/s Sept. 2 at 0500 hours (gage height, 3.07 ft); minimum daily, 0.04 ft³/s May 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	8.9	6.5	1.1	2.9	20	9.4	.06	6.6	9.3	3.0	61
2	8.4	6.2	5.9	1.5	2.7	16	10	.05	21	8.6	3.9	120
3	9.2	6.2	5.7	7.7	3.6	14	2.9	.05	13	8.8	5.2	4.9
4	7.8	6.4	5.4	8.0	1.7	9.4	.99	.05	6.8	7.7	4.7	4.5
5	3.5	6.4	5.3	6.2	4.3	12	.63	.04	7.0	7.1	4.3	39
6	2.3	6.2	4.0	7.2	1.6	16	.52	.04	7.0	7.7	4.2	8.8
7	1.9	7.1	3.5	6.6	1.3	17	.48	3.7	7.8	7.1	3.9	4.9
8	1.8	7.7	3.1	6.4	1.2	13	.39	3.3	40	6.5	3.0	5.1
9	1.7	7.2	3.4	2.6	1.1	8.4	.28	20	8.0	8.1	3.0	5.3
10	1.8	7.3	3.2	1.3	1.1	5.3	.25	27	8.0	27	11	5.2
11	2.0	7.6	3.3	1.2	1.0	11	.25	2.5	12	42	4.1	5.2
12	1.8	7.5	4.2	1.1	.93	2.7	.19	1.9	7.3	27	2.6	5.1
13	1.5	7.5	3.0	1.1	.91	15	.15	1.8	7.5	5.8	2.3	11
14	12	6.4	2.1	1.1	.85	17	.10	1.4	7.9	5.3	2.2	6.7
15	3.1	6.1	4.3	.99	.88	19	.09	1.0	8.3	4.2	2.2	6.2
16	1.7	6.1	2.2	.92	.90	15	.09	1.3	12	3.9	2.1	6.0
17	1.9	7.0	1.6	2.7	.91	19	.09	9.6	15	5.9	1.9	6.0
18	52	7.8	1.3	17	.92	8.7	.09	2.3	11	9.8	1.7	6.3
19	3.7	7.2	1.0	14	.93	1.3	.09	1.8	52	12	9.3	6.4
20	2.8	7.0	1.0	6.7	.96	.90	.09	1.4	10	6.2	19	6.8
21	2.7	7.4	1.0	3.6	.88	1.2	.08	1.1	8.5	5.0	13	6.8
22	2.5	7.3	1.3	1.6	.84	15	.08	1.1	8.4	4.8	7.6	6.5
23	2.3	7.1	4.0	9.2	.88	17	.07	15	8.7	3.0	7.1	6.5
24	2.4	8.0	12	11	.89	17	.06	15	8.1	2.3	6.5	6.6
25	3.8	7.9	13	14	.96	16	.06	21	9.8	1.9	5.5	6.0
26	2.2	7.9	13	14	25	18	.06	13	8.2	1.9	4.6	5.8
27	1.6	6.9	10	15	23	20	.06	4.5	2.1	2.5	14	6.6
28	2.1	6.9	2.3	16	23	28	.05	5.9	.94	2.4	6.1	6.8
29	5.9	5.9	1.2	16	---	27	.05	6.8	.66	2.0	2.7	6.9
30	5.4	6.7	1.2	14	---	24	.06	52	2.0	2.6	2.3	6.1
31	4.6	---	1.8	15	---	9.7	---	7.3	---	3.0	13	---
TOTAL	165.0	211.8	130.8	224.81	106.14	437.60	27.70	221.99	325.60	251.4	176.0	389.0
MEAN	5.32	7.06	4.22	7.25	3.79	14.1	.92	7.16	10.9	8.11	5.68	13.0
MAX	52	8.9	13	17	25	28	10	52	52	42	19	120
MIN	1.5	5.9	1.0	.92	.84	.90	.05	.04	.66	1.9	1.7	4.5
AC-FT	327	420	259	446	211	868	55	440	646	499	349	772

CAL YR 1985 TOTAL 3233.78 MEAN 8.86 MAX 77 MIN .47 AC-FT 6410
WTR YR 1986 TOTAL 2667.84 MEAN 7.31 MAX 120 MIN .04 AC-FT 5290

08136000 CONCHO RIVER AT SAN ANGELO, TX

LOCATION.--Lat 31°27'16", long 100°24'37", Tom Green County, Hydrologic Unit 12090105, on left bank 0.4 mi downstream from confluence of North and South Concho Rivers, 1.8 mi southeast of Tom Green County Courthouse, and 61.9 mi upstream from mouth.

DRAINAGE AREA.--5,542 mi², of which 1,131 mi² probably is noncontributing.

PERIOD OF RECORD.--September 1915 to current year. Prior to October 1969, published as "near San Angelo".

REVISED RECORDS.--WSP 568: 1915-16, 1919-22. WSP 1148: 1916-22(M), 1924(M), 1925-26, 1929(M), 1930-32, 1935-37. WSP 1512: 1917-18. WSP 1712: 1936. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,776.79 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 11, 1917, nonrecording gage at same site and datum. Aug. 11, 1917, to May 15, 1963, water-stage recorder on right bank at same datum.

REMARKS.--Estimated daily discharges: Aug. 25 to Sept. 3. Records good except for estimated discharges, which are fair. Many diversions upstream from station for irrigation, industrial, and municipal supply. Flow is regulated by Twin Buttes Reservoir (station 08131200) on the South Concho River and by O. C. Fisher Lake (station 08134500) on North Concho River. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--47 years (water years 1916-62) prior to construction of Twin Buttes Dam, 158 ft³/s (114,500 acre-ft/yr); 24 years (water years 1963-86) regulated, 21.2 ft³/s (15,360 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 230,000 ft³/s Sept. 17, 1936 (gage height, 46.6 ft, from floodmarks), from rating curve extended above 105,000 ft³/s on basis of slope-area measurements of 167,000 and 230,000 ft³/s; no flow at times in 1921, 1952-53, 1965, and 19 .

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1853, 47.5 ft Aug. 6, 1906 (discharge, about 246,000 ft³/s), from information by local resident. Other large floods are known to have occurred in June 1853, August 1882, and April 1900.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,870 ft³/s Sept. 2 at 0700 hours (gage height, 8.18 ft, from floodmark); minimum daily, 0.05 ft³/s for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	13	.24	.13	4.3	.09	.15	.11	17	.11	.13	105
2	12	13	4.7	.05	8.1	.10	.15	.10	75	.57	.35	950
3	11	3.4	2.4	.05	17	.11	.22	.09	85	2.9	4.5	20
4	12	1.4	.10	.05	4.6	.11	.30	.09	29	.20	6.3	12
5	7.1	3.9	.19	.05	.20	.14	2.6	.09	15	.16	2.3	173
6	4.9	1.2	2.2	.09	.17	.19	5.5	.09	14	.16	.61	188
7	4.5	2.4	.08	.28	.40	.18	3.9	.09	11	.15	.11	24
8	4.9	4.8	.67	.05	.14	.11	.24	.09	58	.12	.06	15
9	5.8	4.6	.39	.08	.11	.09	.13	.11	6.6	.10	.05	18
10	5.5	5.4	.22	.09	.10	.09	.17	109	12	.09	33	16
11	6.5	1.4	.19	.09	.10	.11	.33	33	44	27	5.0	9.6
12	7.7	4.3	.27	.11	.11	.17	.10	13	9.9	52	.12	8.2
13	6.0	6.4	.41	.09	.11	.10	.09	5.6	6.8	3.7	.10	23
14	44	4.0	.68	.17	.12	.11	.08	2.1	3.0	3.8	.74	17
15	17	5.0	.12	.16	.14	.17	.08	.12	.24	.16	.09	10
16	9.9	.13	.06	.23	.13	.10	.08	.09	.25	.09	.07	5.8
17	5.9	.11	.06	.14	.12	.10	.09	31	38	.09	.06	9.6
18	423	.13	.06	.12	.10	18	.11	19	26	.07	.06	9.0
19	47	.36	.14	.05	.09	.20	.11	4.1	188	.77	.06	9.3
20	14	.95	.13	.06	.09	.12	.10	.21	50	9.9	.06	9.8
21	9.2	1.9	.13	.06	.09	.11	.09	1.2	18	3.0	.11	10
22	8.0	1.1	.13	.06	.08	.11	.09	1.1	12	.09	.12	4.4
23	5.6	2.9	.08	.07	.08	.11	.09	.11	.63	.06	.07	8.5
24	5.2	3.7	.14	.09	.09	.11	.10	.09	.47	.06	.06	14
25	12	.22	.19	.16	.09	.11	.11	64	.47	.05	.25	14
26	11	.12	.16	.06	.09	.20	.12	71	1.3	.05	.35	13
27	7.0	.22	.20	.06	.09	.20	.13	21	.20	.05	5.0	12
28	2.6	5.2	.06	.07	.09	.19	.13	8.5	.15	.21	4.5	12
29	.12	5.8	.07	.08	---	.20	.11	.24	.13	1.8	4.0	15
30	.13	.12	.63	.08	---	8.4	.11	307	.11	3.0	3.0	14
31	.21	---	.05	.08	---	.20	---	39	---	3.2	55	---
TOTAL	724.81	97.16	15.15	3.01	36.93	30.33	15.61	731.32	722.25	113.71	126.23	1749.2
MEAN	23.4	3.24	.49	.10	1.32	.98	.52	23.6	24.1	3.67	4.07	58.3
MAX	423	13	4.7	.28	17	18	5.5	307	188	52	55	950
MIN	.13	.11	.05	.05	.08	.09	.08	.09	.11	.05	.05	4.4
AC-FT	1440	193	30	6.0	73	60	31	1450	1430	226	250	3470

CAL YR 1985 TOTAL 2488.90 MEAN 6.82 MAX 423 MIN .03 AC-FT 4940
WTR YR 1986 TOTAL 4365.71 MEAN 12.0 MAX 950 MIN .05 AC-FT 8660

08136500 CONCHO RIVER AT PAINT ROCK, TX

LOCATION.--Lat 31°30'57", long 99°55'09", Concho County, Hydrologic Unit 12090105, near left bank at downstream end of pier of bridge on U.S. Highway 83, 0.5 mi north of Concho County Courthouse in Paint Rock, 2.7 mi downstream from Kickapoo Creek, and 20.0 mi upstream from mouth.

DRAINAGE AREA.--6,574 mi², of which 1,131 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1915 to current year. Prior to October 1970, published as "near Paint Rock".

REVISED RECORDS.--WSP 458: 1915-16. WSP 568: 1919-20. WSP 1712: 1922(M). WSP 1732: 1918(M), 1923(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder with masonry dam control. Datum of gage is 1,574.36 ft above National Geodetic Vertical Datum of 1929. See WSP 1922 for history of changes prior to Jan. 15, 1940.

REMARKS.--No estimated daily discharges. Records good, except those below 10 ft³/s, which are poor. There are many diversions above station for irrigation and municipal supply. Regulation is the same as that for Concho River at San Angelo (station 08136000). Flow is affected at times by discharge from flood-detention pools of two floodwater-retarding structures with a combined detention capacity of 2,690 acre-ft. These structures control runoff from 16.5 mi² in the Willow Creek drainage basin.

AVERAGE DISCHARGE.--47 years (water years 1916-62) prior to construction of Twin Buttes Dam, 210 ft³/s (152,100 acre-ft/yr); 24 years (water years 1963-86) regulated, 55.7 ft³/s (40,350 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 301,000 ft³/s Sept. 17, 1936 (gage height, 43.4 ft, from floodmarks), from rating curve extended above 98,000 ft³/s on basis of slope-area measurements of 144,000 and 301,000 ft³/s; no flow at times.
Maximum stage since at least 1853, that of Sept. 17, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1882 reached a stage of about 39.9 ft, and flood in August 1906 reached a stage of 39.5 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,510 ft³/s Oct. 18 at 1900 hours (gage height, 16.95 ft); minimum daily discharge, 0.02 ft³/s on Aug. 7-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	154	24	22	17	23	2.2	5.0	.10	168	14	.18	585
2	50	23	22	17	16	1.3	4.9	.07	547	13	.09	1540
3	39	24	24	18	26	1.8	5.0	.04	637	13	.04	1040
4	38	35	22	14	25	2.2	4.4	.03	604	16	.05	233
5	32	37	22	11	35	3.4	4.0	.04	255	18	.05	111
6	30	32	24	11	47	3.3	4.0	.05	141	13	.04	468
7	27	25	26	10	36	4.0	4.0	.06	69	10	.02	375
8	19	25	21	11	27	3.8	4.1	.39	55	7.7	.02	139
9	15	29	20	14	22	3.9	2.5	2.2	44	6.7	.02	84
10	15	33	20	16	18	3.2	1.6	6.7	70	4.3	.02	64
11	27	38	20	17	17	2.7	1.6	118	42	2.3	.02	56
12	18	42	19	16	18	1.4	1.1	38	28	2.3	.02	48
13	22	41	19	17	20	2.2	.77	19	94	1.1	.02	48
14	20	40	20	19	22	1.6	.49	12	269	32	.02	193
15	19	37	19	18	22	2.0	.49	9.0	43	18	.02	88
16	31	44	20	16	19	2.2	.74	9.5	26	11	.02	60
17	41	45	22	17	12	2.5	.98	26	31	8.5	.02	46
18	1890	47	21	17	13	4.2	1.1	77	81	6.2	.02	41
19	1590	53	16	19	13	2.8	1.2	45	67	5.0	.02	37
20	286	53	19	21	13	1.7	.76	41	83	4.9	.02	37
21	108	46	17	22	12	1.2	.76	28	186	4.8	.02	36
22	56	43	18	22	11	1.0	.65	18	67	3.4	.02	32
23	43	38	17	16	9.8	.76	.71	12	41	1.7	.02	32
24	42	23	18	13	8.6	.69	.62	9.0	32	.69	.02	32
25	676	25	19	13	6.8	.68	.39	12	27	.44	.02	31
26	339	27	17	16	5.7	.74	.27	14	22	1.5	.02	30
27	95	28	14	19	4.1	.93	.13	32	19	2.1	.02	35
28	52	28	12	21	3.2	2.2	.04	70	17	1.7	142	37
29	39	25	11	20	---	5.4	.04	43	16	1.0	118	40
30	28	24	10	22	---	5.0	.07	31	14	.63	98	42
31	24	---	16	25	---	5.0	---	227	---	.40	46	---
TOTAL	5865	1034	587	525	505.2	76.00	52.41	900.18	3795	225.36	404.87	5640
MEAN	189	34.5	18.9	16.9	18.0	2.45	1.75	29.0	127	7.27	13.1	188
MAX	1890	53	26	25	47	5.4	5.0	227	637	32	142	1540
MIN	15	23	10	10	3.2	.68	.04	.03	14	.40	.02	30
AC-FT	11630	2050	1160	1040	1000	151	104	1790	7530	447	803	11190

CAL YR 1985 TOTAL 13095.73 MEAN 35.9 MAX 1890 MIN .00 AC-FT 25980
WTR YR 1986 TOTAL 19610.02 MEAN 53.7 MAX 1890 MIN .02 AC-FT 38900

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1946 to October 1949. Chemical and biochemical analyses: March 1964 to current year. Pesticide analyses: April 1968 to October 1981. Sediment analyses: May 1978 to September 1980.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.
SUSPENDED SEDIMENT DISCHARGE: February 1978 to September 1981.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,690 microsiemens June 28, Aug. 12, 1984; minimum daily, 268 microsiemens Sept. 9, 1980.
WATER TEMPERATURES: Maximum daily, 35.0°C on several days during summer months; minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 4,190 mg/L Sept. 9, 1980; minimum daily mean, 3 mg/L Feb. 2, 1979.
SEDIMENT LOADS: Maximum daily, 269,000 tons Sept. 9, 1980; minimum daily, 0.0 tons on several days during Sept. 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,530 microsiemens May 8; minimum daily, 436 microsiemens Oct. 18.
WATER TEMPERATURES: Maximum daily, 32.0°C July 23, 25; minimum daily, 8.0°C Dec. 19, 20.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3
OCT												
24...	1510	41	782	8.20	23.5	55	24	10.2	127	1.3	220	120
DEC												
05...	1530	38	2670	8.20	10.0	7	8.0	11.3	105	3.0	790	580
FEB												
06...	1555	61	2990	8.20	15.0	20	13	11.5	122	4.0	860	660
APR												
30...	1545	0.1	3380	8.10	26.0	20	6.5	8.3	110	4.4	980	860
JUN												
04...	1420	509	474	--	26.0	--	--	--	--	--	130	44
19...	1600	84	900	7.70	26.0	20	35	9.2	121	3.7	230	130
AUG												
21...	1515	0.01	2120	8.40	32.0	15	5.4	11.9	--	6.0	550	450
SEP												
09...	1055	90	752	--	24.0	--	--	--	--	--	220	100

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT											
24...	54	20	62	2	6.7	99	75	140	0.2	10	430
DEC											
05...	170	88	270	4	7.2	209	340	580	0.6	14	1600
FEB											
06...	180	100	300	5	5.8	205	440	660	0.6	10	1800
APR											
30...	180	130	360	5	7.6	129	460	840	0.6	7.4	2100
JUN											
04...	37	10	31	1	5.5	90	39	59	0.2	9.8	250
19...	55	23	85	3	5.7	102	83	170	0.3	12	500
AUG											
21...	110	67	220	4	8.3	102	240	470	0.6	29	1200
SEP											
09...	56	19	61	2	5.5	115	59	120	0.3	13	400

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
OCT											
24...	29	12	0.86	0.04	0.90	0.14	0.66	0.8	0.09	5.7	--
DEC											
05...	15	8	5.02	0.08	5.10	0.06	0.84	0.9	0.51	5.5	2
FEB											
06...	22	8	6.91	0.09	7.00	0.06	1.1	1.2	0.04	8.3	--
APR											
30...	19	10	--	<0.01	<0.10	0.13	0.97	1.1	0.05	11	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
19...	84	16	0.37	0.03	0.40	0.07	0.93	1.0	0.06	8.3	6
AUG											
21...	11	9	--	<0.01	<0.10	0.04	1.5	1.5	0.09	13	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
24...	--	--	--	--	--	--	--	--	--	--	--
DEC											
05...	200	<1	<10	<1	30	<1	<10	<0.1	2	<1	<10
FEB											
06...	--	--	--	--	--	--	--	--	--	--	--
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
19...	100	<1	<10	1	16	<5	3	<0.1	<1	<1	8
AUG											
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1985	5865	632	349	5530	110	1810	55	876	180
NOV.	1985	1034	1670	957	2670	340	938	190	517	490
DEC.	1985	587	2760	1630	2580	600	957	360	576	820
JAN.	1986	525	2750	1630	2310	600	855	360	515	820
FEB.	1986	505.2	2800	1660	2260	620	840	370	509	840
MAR.	1986	76.00	3090	1850	379	700	143	430	88	930
APR.	1986	52.41	3240	1950	276	740	105	460	66	970
MAY	1986	900.18	1830	1060	2560	380	914	210	517	540
JUNE	1986	3795	1010	564	5780	190	1950	97	993	290
JULY	1986	225.36	1980	1140	692	400	245	230	137	580
AUG.	1986	404.87	1380	785	858	270	297	150	160	410
SEPT	1986	5640	933	518	7890	170	2610	85	1290	270
TOTAL		19610.02	**	**	33800	**	11700	**	6240	**
WTD.AVG.		54	1120	638	**	220	**	120	**	330

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1280	1050	2630	2850	2980	3000	3210	3430	1750	1750	2050	1460
2	1000	1790	2650	2920	3070	3110	3240	3460	1260	2160	2040	789
3	2030	1920	2780	2900	2990	3020	3210	3460	1030	1920	2070	784
4	2010	937	2660	2940	2880	3090	3220	3480	581	1810	2050	697
5	1890	871	2810	2930	2400	3040	3220	3490	547	1900	2050	818
6	1740	855	2760	2910	2090	3070	3240	3500	540	2280	2060	1140
7	1600	840	2690	2950	2450	3050	3230	3520	700	2660	2060	950
8	1580	1190	2660	2870	2580	3120	3170	3530	790	1920	2070	742
9	1880	1440	2680	2680	2720	3090	3190	3500	852	1940	2080	752
10	1950	1310	2720	2290	2860	3100	3290	3440	769	1900	2050	788
11	1410	1180	2680	2540	3040	3090	3270	2670	982	1970	2000	601
12	1540	1190	2780	2910	3060	3110	3300	2710	1050	1900	2060	830
13	1650	1320	2800	2940	2990	3120	3320	2960	970	2240	2060	827
14	1820	1500	2790	2750	3010	3140	3340	3140	740	1920	2090	630
15	2260	2210	2840	2830	2980	3060	3320	3360	2050	1890	2080	1240
16	2280	1740	2750	2950	2970	3100	3310	3340	3400	1930	2100	1170
17	2250	1690	2780	2930	2950	3010	3320	2240	3230	1940	2160	1160
18	436	1540	2790	2960	3020	3110	3330	1390	1340	1930	2200	1250
19	570	1150	2790	2740	3000	3120	3340	1370	1160	1970	2120	1550
20	607	1570	2630	2510	3040	3130	3360	1250	885	1970	2130	1040
21	667	2090	2820	2300	3030	3100	3370	1310	626	1980	2130	1110
22	726	2050	2800	2240	3020	3100	3360	1320	1360	1960	2100	1200
23	716	2210	2840	2950	3040	3120	3310	2450	1610	1980	2030	1060
24	755	2440	2760	2970	3050	3140	3210	3160	2200	2010	2120	1300
25	460	2590	2710	2850	3060	3120	3370	2870	1690	2030	2200	1170
26	485	2620	2850	2710	3040	3150	3410	2640	1280	2000	2180	1390
27	520	2530	2860	2430	2990	3160	3380	1930	1420	1950	2140	1050
28	567	2520	2870	2280	3060	3120	3350	1300	1910	2020	950	1080
29	855	2560	2900	2970	---	3050	3410	1950	1920	2000	1040	1120
30	900	2600	2880	2990	---	3060	3430	2170	1900	2020	1750	1160
31	1010	---	2850	2940	---	3170	---	1170	---	2010	2790	---
MEAN	1270	1720	2770	2770	2910	3100	3300	2630	1350	2000	2030	1030

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	20.0	---	12.0	17.0	17.0	21.0	25.0	---	31.0	30.0	---
2	21.0	20.0	12.0	---	---	---	21.0	24.0	26.0	30.0	31.0	29.0
3	22.0	21.0	10.0	14.0	16.0	16.0	22.0	24.0	25.0	30.0	---	28.0
4	23.0	20.0	11.0	13.0	16.0	18.0	21.0	23.0	25.0	31.0	28.0	29.0
5	22.0	20.0	17.0	---	16.0	19.0	19.0	25.0	27.0	30.0	28.0	28.0
6	---	---	16.0	14.0	15.0	18.0	---	25.0	26.0	---	28.0	29.0
7	23.0	20.0	17.0	10.0	16.0	17.0	18.0	25.0	26.0	31.0	30.0	---
8	22.0	19.0	17.0	11.0	15.0	17.0	19.0	26.0	28.0	30.0	29.0	29.0
9	23.0	20.0	10.0	12.0	---	19.0	18.0	25.0	---	31.0	30.0	29.0
10	22.0	---	11.0	13.0	10.0	18.0	17.0	25.0	28.0	30.0	---	28.0
11	23.0	20.0	10.0	12.0	11.0	20.0	18.0	26.0	28.0	30.0	29.0	29.0
12	23.0	21.0	9.0	---	13.0	19.0	19.0	25.0	28.0	29.0	29.0	28.0
13	---	20.0	11.0	9.0	13.0	18.0	---	25.0	27.0	---	29.0	28.0
14	23.0	20.0	13.0	14.0	13.0	18.0	21.0	26.0	28.0	26.0	29.0	---
15	22.0	18.0	---	13.0	15.0	19.0	20.0	27.0	---	28.0	29.0	29.0
16	24.0	19.0	11.0	12.0	---	---	21.0	26.0	27.0	29.0	30.0	29.0
17	23.0	---	12.0	13.0	14.0	18.0	23.0	25.0	---	31.0	---	28.0
18	21.0	18.0	13.0	14.0	17.0	19.0	25.0	20.0	27.0	31.0	29.0	28.0
19	22.0	16.0	8.0	15.0	18.0	18.0	23.0	21.0	26.0	31.0	30.0	29.0
20	20.0	15.0	8.0	14.0	19.0	17.0	---	22.0	26.0	---	30.0	28.0
21	---	16.0	9.0	12.0	15.0	20.0	24.0	21.0	27.0	30.0	30.0	---
22	25.0	15.0	---	14.0	16.0	18.0	24.0	23.0	27.0	31.0	29.0	28.0
23	23.0	---	12.0	---	---	---	24.0	22.0	27.0	32.0	29.0	29.0
24	24.0	18.0	12.0	17.0	18.0	19.0	24.0	22.0	26.0	31.0	---	28.0
25	22.0	18.0	---	17.0	18.0	20.0	26.0	---	27.0	32.0	28.0	28.0
26	23.0	17.0	9.0	15.0	17.0	22.0	25.0	21.0	28.0	31.0	25.0	28.0
27	23.0	17.0	10.0	---	19.0	22.0	---	22.0	27.0	---	28.0	27.0
28	23.0	16.0	11.0	15.0	17.0	21.0	24.0	22.0	27.0	31.0	26.0	---
29	22.0	19.0	11.0	17.0	---	20.0	24.0	23.0	---	30.0	---	28.0
30	20.0	19.0	11.0	17.0	---	---	25.0	22.0	29.0	31.0	---	29.0
31	18.0	---	11.0	16.0	---	---	---	24.0	---	30.0	28.0	---
MEAN	22.5	18.5	11.5	13.5	15.5	18.5	22.0	23.5	27.0	30.5	29.0	28.5

08136700 COLORADO RIVER NEAR STACY, TX

LOCATION.--Lat 31°29'37", long 99°34'25", Coleman County, Hydrologic Unit 12090106, on left bank at downstream side of bridge on Farm Road 503, 1.2 mi upstream from Bois d'Arc Creek, 1.8 mi northeast of Stacy, 24 mi downstream from Concho River, and at mile 604.8.

DRAINAGE AREA.--24,193 mi², approximately, of which 11,391 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1968 to current year. Prior to October 1970, published as "at Stacy".

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,394.66 ft above National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bridge plans).

REMARKS.--No estimated daily discharges. Records good. There are many diversions above station for irrigation, municipal, and oilfield operation uses. Sewage effluent is returned to the river from numerous sewage plants above station. Flow is affected by upstream reservoirs (see stations 08126380 and 08136000) and at times by discharge from the flood-detention pools of 42 floodwater-retarding structures with a combined detention capacity of 56,730 acre-ft. These structures control runoff from 277 mi².

AVERAGE DISCHARGE.--18 years (water years 1969-86), 201 ft³/s (145,600 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft³/s Sept. 10, 1980 (gage height, 28.00 ft); no flow at times in 1974, 1980, and 1983-86.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since since at least 1882, 356,000 ft³/s Sept. 18, 1936 (gage height, 64.59 ft), by slope-area measurement of peak flow. The flood of Sept. 18, 1936, was 4 ft higher than the 1906 flood and 7 to 8 ft higher than the 1882 flood, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,700 ft³/s Sept. 2 at 1000 hours (gage height, 14.25 ft); no flow Apr. 22 to May 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	577	59	32	17	10	11	1.6	.00	1370	34	2.7	566
2	299	51	31	16	12	8.6	1.1	.00	1070	31	2.5	9340
3	149	45	28	14	26	8.4	.97	.00	2060	29	3.3	6040
4	91	41	27	12	31	8.5	1.0	.00	4220	28	32	1670
5	64	38	26	16	30	7.4	.92	.00	2220	46	14	858
6	48	36	26	18	76	7.0	.85	.00	3600	96	6.2	684
7	38	46	27	18	70	6.4	.83	.00	1600	72	4.1	1460
8	30	43	27	19	60	6.4	.55	.00	777	54	2.8	779
9	28	37	26	18	59	6.6	.29	.08	1440	40	2.0	533
10	27	32	26	17	56	6.5	.26	46	420	31	1.8	412
11	25	31	26	17	51	6.4	.26	128	382	24	1.9	352
12	15	31	25	18	46	6.0	.30	79	320	398	2.6	540
13	12	31	25	20	40	5.9	.48	91	227	354	2.9	719
14	48	31	25	21	36	5.8	.58	69	168	118	3.9	733
15	48	34	26	21	33	6.0	.63	46	335	64	9.7	1000
16	37	35	26	21	29	6.6	.51	32	170	40	30	751
17	32	35	26	21	28	6.3	.42	41	113	30	18	688
18	144	31	26	20	26	6.8	.35	161	97	29	11	668
19	6450	29	27	19	25	6.7	.20	142	137	22	8.7	656
20	1460	31	27	20	24	6.8	.05	115	362	15	6.3	627
21	554	29	27	17	22	6.7	.02	75	355	12	4.5	632
22	295	29	27	17	20	6.3	.00	51	280	10	4.2	624
23	176	29	27	16	19	5.9	.00	45	170	8.4	3.3	613
24	120	29	26	13	18	5.8	.00	35	121	7.3	3.3	620
25	92	28	24	15	18	5.5	.00	37	97	6.4	2.9	613
26	519	36	22	17	17	4.7	.00	34	80	5.1	2.7	613
27	317	35	21	16	15	3.8	.00	27	67	3.8	123	611
28	158	32	21	13	13	3.8	.00	21	56	3.9	3370	609
29	106	33	21	12	---	3.2	.00	17	47	3.4	9300	608
30	82	34	21	11	---	2.5	.00	83	40	3.0	1840	650
31	67	---	20	9.3	---	2.0	---	753	---	2.8	684	---
TOTAL	12108	1061	792	519.3	910	190.3	12.17	2128.08	22401	1621.1	15504.3	35269
MEAN	391	35.4	25.5	16.8	32.5	6.14	.41	68.6	747	52.3	500	1176
MAX	6450	59	32	21	76	11	1.6	753	4220	398	9300	9340
MIN	12	28	20	9.3	10	2.0	.00	.00	40	2.8	1.8	352
AC-FT	24020	2100	1570	1030	1800	377	24	4220	44430	3220	30750	69960

CAL YR 1985 TOTAL 29571.27 MEAN 81.0 MAX 6450 MIN .00 AC-FT 58650
WTR YR 1986 TOTAL 92516.25 MEAN 253 MAX 9340 MIN .00 AC-FT 183500

BEST COPY AVAILABLE

08136700 COLORADO RIVER NEAR STACY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--chemical analyses: December 1961 to current year. Chemical and biochemical analyses: October 1974 to October 1977. Pesticide analyses: April 1975 to August 1977. Sediment analyses: October 1974 to October 1977.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to current year.
WATER TEMPERATURES: April 1968 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,250 microsiemens Sept. 30, 1986; minimum daily, 165 microsiemens June 9, 1986.
WATER TEMPERATURES: Maximum daily, 35.0°C July 1, 1980; minimum daily, 0.0°C Feb. 9, 10, 1981.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,250 microsiemens Sept. 30; minimum daily, 165 microsiemens June 9.
WATER TEMPERATURES: Maximum daily, 33.0°C on several days during June, July, and August; minimum daily, 6.0°C Feb. 11, 12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT									
07...	1005	39	2110	19.5	680	610	150	75	190
NOV									
18...	1045	32	871	17.5	290	180	77	23	61
JAN									
06...	1045	18	2150	8.5	630	460	150	62	200
FEB									
11...	1110	53	2510	5.5	830	660	200	80	200
JUN									
24...	1110	120	910	30.0	280	180	68	27	76
AUG									
29...	1120	11000	295	26.0	110	33	29	8.5	28

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
07...	3	8.2	77	410	390	0.4	12	1300
NOV								
18...	2	6.0	110	150	120	0.2	5.8	510
JAN								
06...	4	6.4	172	350	400	0.4	7.1	1300
FEB								
11...	3	5.6	166	500	470	0.5	5.6	1600
JUN								
24...	2	6.2	103	150	150	0.3	9.3	550
AUG								
29...	1	4.0	74	40	36	0.2	5.0	200

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	12108	801	456	14900	140	4420	110	3680	230
NOV. 1985	1061	1010	578	1660	170	493	140	411	290
DEC. 1985	792	1440	844	1810	260	555	220	473	430
JAN. 1986	519.3	2210	1330	1870	430	597	370	524	680
FEB. 1986	910	2570	1570	3860	510	1260	460	1120	810
MAR. 1986	190.3	2850	1760	906	580	300	520	269	910
APR. 1986	12.17	3030	1890	62	630	21	570	19	970
MAY 1986	2128 08	1660	991	5690	310	1790	270	1560	510
JUNE 1986	22401	428	238	14400	68	4120	55	3330	120
JULY 1986	1621.1	711	401	1760	120	513	96	422	200
AUG. 1986	15504.3	329	182	7620	51	2150	41	1730	92
SEPT 1986	35269	1260	772	73500	250	24000	220	21300	400
TOTAL	92516.25	**	**	128000	**	40200	**	34800	**
WTD.AVG.	253	864	513	**	160	**	140	**	260

08136700 COLORADO RIVER NEAR STACY, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1260	1230	1000	2110	2350	2850	2970	---	475	908	640	595
2	1540	1210	1020	2140	2360	2830	2980	---	590	918	620	423
3	2050	1250	1040	2120	2370	2820	2980	---	540	910	635	366
4	2200	1280	1050	2120	2400	2840	2990	---	403	960	610	440
5	2150	1260	1060	2130	2420	2820	2980	---	390	945	640	402
6	2110	1240	1090	2150	2460	2810	3000	---	317	900	628	752
7	2060	1090	1120	2140	2440	2840	3020	---	280	1070	622	445
8	2070	1140	1190	2160	2350	2820	3020	---	310	1140	653	520
9	2070	1070	1200	2190	2400	2790	3060	3280	165	1180	643	530
10	2020	1040	1210	2220	2470	2800	3100	1750	334	1230	665	542
11	2050	1000	1230	2240	2550	2820	3120	590	421	1250	670	523
12	2000	980	1250	2230	2640	2830	3060	750	416	670	668	624
13	2140	940	1260	2220	2700	2820	3080	1450	481	525	666	1020
14	1830	930	1280	2240	2720	2840	3090	2080	454	495	652	1290
15	1900	900	1310	2210	2700	2820	3070	2120	435	454	673	2670
16	1920	880	1350	2200	2680	2800	3100	2020	674	470	588	2420
17	1930	875	1380	2180	2720	2850	3120	1960	740	525	620	1890
18	1350	840	1450	2190	2700	2830	3130	2130	809	570	655	2570
19	760	850	1510	2220	2710	2840	3140	2450	825	590	604	2770
20	490	830	1580	2180	2730	2850	3160	2690	787	607	709	2840
21	350	840	1650	2200	2740	2880	3170	2650	740	621	708	2810
22	400	845	1710	2210	2770	2870	---	2630	825	630	741	2850
23	460	850	1760	2230	2780	2890	---	2480	900	650	757	2850
24	530	860	1840	2240	2760	2900	---	2300	972	647	775	2870
25	560	870	1920	2260	2770	2910	---	2230	928	653	811	3250
26	420	880	1970	2280	2800	2910	---	2160	894	657	808	3710
27	610	890	2010	2300	2820	2920	---	2120	890	662	701	3960
28	700	920	2040	2320	2830	2930	---	2110	900	665	360	4110
29	820	940	2060	2330	---	2940	---	2130	910	674	287	4240
30	1000	970	2080	2340	---	2960	---	2300	920	676	379	4250
31	1200	---	2090	2340	---	2950	---	1060	---	680	465	---
MEAN	1390	990	1470	2210	2610	2660	3060	2060	624	759	636	1950

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	17.0	---	---	15.0	16.0	24.0	---	---	30.0	33.0	---
2	19.0	17.0	---	11.0	---	---	22.0	---	25.0	33.0	33.0	24.0
3	21.0	---	11.0	10.0	16.0	17.0	24.0	---	25.0	32.0	---	25.0
4	20.0	17.0	12.0	10.0	16.0	18.0	25.0	---	24.0	---	29.0	26.0
5	19.0	17.0	11.0	10.0	15.0	18.0	26.0	---	24.0	31.0	29.0	26.0
6	---	18.0	11.0	---	16.0	18.0	26.0	---	26.0	---	31.0	21.0
7	22.0	---	11.0	8.0	14.0	19.0	27.0	---	27.0	30.0	31.0	---
8	20.0	18.0	15.0	9.0	12.0	20.0	27.0	---	---	29.0	31.0	26.0
9	23.0	21.0	---	8.0	---	---	22.0	24.0	26.0	31.0	31.0	25.0
10	24.0	---	13.0	8.0	8.0	20.0	---	23.0	26.0	31.0	---	25.0
11	25.0	---	10.0	9.0	6.0	22.0	21.0	---	28.0	31.0	29.0	27.0
12	26.0	21.0	10.0	---	6.0	---	21.0	28.0	31.0	31.0	32.0	26.0
13	---	21.0	---	9.0	7.0	18.0	---	27.0	33.0	---	32.0	27.0
14	---	20.0	7.0	9.0	10.0	---	23.0	26.0	---	30.0	31.0	---
15	24.0	17.0	---	10.0	11.0	17.0	22.0	26.0	---	30.0	31.0	27.0
16	23.0	18.0	7.0	12.0	---	---	23.0	24.0	30.0	30.0	30.0	28.0
17	23.0	---	7.0	12.0	---	20.0	25.0	---	---	---	---	28.0
18	---	18.0	7.0	12.0	15.0	18.0	---	---	30.0	31.0	31.0	28.0
19	22.0	18.0	7.0	---	18.0	17.0	---	23.0	30.0	31.0	32.0	28.0
20	---	16.0	8.0	---	18.0	18.0	---	25.0	29.0	---	33.0	27.0
21	21.0	15.0	9.0	14.0	16.0	18.0	25.0	26.0	30.0	33.0	31.0	---
22	22.0	15.0	---	---	16.0	18.0	---	26.0	---	32.0	29.0	27.0
23	22.0	16.0	10.0	13.0	---	---	---	29.0	31.0	30.0	28.0	28.0
24	25.0	---	10.0	14.0	18.0	---	---	28.0	30.0	31.0	---	27.0
25	24.0	18.0	---	13.0	18.0	22.0	---	---	30.0	33.0	28.0	26.0
26	---	19.0	9.0	---	22.0	23.0	---	---	32.0	33.0	28.0	26.0
27	---	17.0	10.0	12.0	17.0	22.0	---	26.0	32.0	---	24.0	28.0
28	22.0	---	9.0	12.0	17.0	24.0	---	27.0	30.0	32.0	25.0	---
29	22.0	15.0	---	12.0	---	23.0	---	28.0	---	33.0	27.0	26.0
30	19.0	17.0	11.0	13.0	---	---	---	25.0	32.0	32.0	24.0	25.0
31	19.0	---	11.0	14.0	---	25.0	---	25.0	---	32.0	---	---
MEAN	22.0	17.5	10.0	11.0	14.0	19.5	24.0	26.0	28.5	31.5	29.5	26.5

08138000 COLORADO RIVER AT WINCHELL, TX

LOCATION.--Lat 31°28'04", long 99°09'43", McCulloch-Brown County line, Hydrologic Unit 12090106, near left bank at downstream end of pier of bridge on U.S. Highway 377, 0.3 mi south of Winchell, 5.9 mi downstream from Home Creek, and at mile 560.7.

DRAINAGE AREA.--25,179 mi^2, approximately, of which 11,391 mi^2 probably is noncontributing.

PERIOD OF RECORD.--November 1923 to September 1934 (published as "near Milburn"), June 1939 to current year.
Water-quality records.--Chemical analyses: November 1967 to September 1985.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,264.86 ft above National Geodetic Vertical Datum of 1929. November 1923 to September 1934, nonrecording gage at site 4.2 mi downstream at datum 10.14 ft lower. Jan. 13, 1939, to Mar. 24, 1940, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. There are many diversions above station for irrigation, municipal supply and oilfield operation. Flow is affected by reservoirs upstream (see stations 08126380 and 08136000) and at times by discharge from the flood-detention capacity pools of 89 floodwater-retarding structures with a combined detention capacity of 105,100 acre-ft. These structures control runoff from 512 mi^2.

AVERAGE DISCHARGE.--39 years (water years 1925-34, 1940-68) prior to completion of Robert Lee Dam, 628 ft^3/s (455,000 acre-ft/yr); 18 years (water years 1969-86) partially regulated, 250 ft^3/s (181,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,100 ft^3/s Oct. 15, 1930 (gage height, 51.8 ft, present site and datum); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest stages since 1882 were 62.2 ft Sept. 19, 1936, and 56.2 ft Aug. 8, 1906, at railway bridge 1,000 ft upstream and converted to present site and datum, from information by Gulf, Colorado, and Santa Fe Railway Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,300 ft^3/s June 5 at 2100 hours (gage height, 20.06 ft); no flow Apr. 19 to May 8, Aug. 2-4, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	80	33	21	16	14	2.6	.00	2460	34	.01	2270
2	421	70	32	21	16	13	2.3	.00	5710	29	.00	6360
3	312	63	32	21	2790	12	2.3	.00	4890	32	.00	9050
4	181	54	32	20	514	11	2.6	.00	4560	30	.00	3250
5	114	48	31	18	140	11	3.7	.00	7630	30	.01	1600
6	81	42	28	16	78	9.9	3.0	.00	6530	25	15	1470
7	61	40	27	14	57	8.2	1.9	.00	5400	25	35	1410
8	50	38	26	13	84	8.0	1.6	.00	1980	71	21	1680
9	42	45	26	16	74	8.4	.97	120	2390	55	13	843
10	36	47	27	17	67	6.9	.73	763	1260	40	7.7	552
11	33	41	26	17	64	5.6	.61	333	751	29	24	403
12	34	38	25	18	59	4.6	.59	166	624	23	9.4	323
13	27	33	25	18	53	4.6	.81	97	447	295	1.8	623
14	25	31	25	17	46	4.3	.49	67	307	307	1.0	1300
15	23	31	25	17	41	3.6	.31	76	228	142	.59	885
16	23	31	25	19	37	3.6	.20	57	366	77	.21	951
17	50	31	24	23	32	3.6	.10	112	248	49	.07	755
18	126	36	24	24	30	5.9	.03	183	168	33	.05	707
19	5330	35	24	25	27	5.6	.00	120	231	24	.03	676
20	3710	30	25	25	26	5.7	.00	194	181	20	.00	659
21	1150	27	25	24	23	5.8	.00	122	421	17	8.8	647
22	591	27	25	21	21	5.2	.00	95	392	13	8.1	635
23	344	27	25	21	21	6.4	.00	63	308	8.5	6.6	631
24	229	27	25	20	19	4.9	.00	45	202	5.2	5.5	625
25	162	28	25	18	18	4.6	.00	113	138	3.9	4.4	628
26	122	33	24	18	18	4.6	.00	101	102	2.4	3.6	628
27	507	64	24	16	17	4.6	.00	43	80	.92	3.1	627
28	346	52	24	15	15	4.1	.00	34	62	.76	37	627
29	193	43	22	17	---	3.8	.00	26	51	.53	6840	627
30	128	36	21	17	---	3.7	.00	19	42	.25	5270	631
31	98	---	20	17	---	3.2	---	285	---	.12	1080	---
TOTAL	14566	1228	802	584	4403	200.4	24.84	3239.00	48159	1422.58	13395.97	42073
MEAN	470	40.9	25.9	18.8	157	6.46	.83	104	1605	45.9	432	1402
MAX	5330	80	33	25	2790	14	3.7	763	7630	307	6840	9050
MIN	17	27	20	13	15	3.2	.00	.00	42	.12	.00	323
AC-FT	28890	2440	1590	1160	8730	397	49	6420	95520	2820	26570	83450

CAL YR 1985 TOTAL 46425.69 MEAN 127 MAX 5330 MIN .00 AC-FT 92090
WTR YR 1986 TOTAL 130097.79 MEAN 356 MAX 9050 MIN .00 AC-FT 258000

08141000 HORDS CREEK LAKE NEAR VALERA, TX

LOCATION.--Lat 31°49'58", long 99°33'38", Coleman County, Hydrologic Unit 12090108, at outlet-works structure near right end of dam on Hords Creek, 5.6 mi north of Valera, and 8.8 mi west of Coleman.

DRAINAGE AREA.--48 mi^2, approximately.

PERIOD OF RECORD.--April 1948 to current year. Prior to October 1970, published as Hords Creek Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 6,800 ft long, including spillway. Deliberate impoundment of water began Apr. 7, 1948, and the dam was completed in June 1948. The spillway is an excavated channel through natural ground, 500 ft wide, located about 600 ft from the right end of dam. The spillway consists of three concrete conduits; two controlled by 5.0- by 6.0-foot slide gates, and a third uncontrolled ogee spillway 4.0 ft wide and 19.5 ft high. The lake is operated for flood control and municipal water supply for the city of Coleman. The capacity table of August 1974 is based on a sedimentation survey made in 1948. Flow is affected at times by discharge from the flood-detention pool of one floodwater-retarding structure with a detention capacity of 1,370 acre-ft. This structure controls runoff from 6.82 mi^2 in the Jim Ned Creek drainage basin. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,939.0	-
Design flood	1,933.6	-
Crest of spillway	1,920.0	24,730
Crest of spillway (top of conservation pool)	1,900.0	8,110
Lowest gated outlet (invert)	1,856.0	3

COOPERATION.--Records furnished by U.S. Army Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 12,790 acre-ft May 1, 1956 (elevation, 1,906.86 ft); minimum since first appreciable storage in June 1951, 1,550 acre-ft Sept. 2, 1984 (elevation, 1,878.01 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 3,340 acre-ft June 5 at 2400 hours (elevation, 1,887.01 ft); minimum daily, 1,790 acre-ft Oct. 16 at 1600 hours (elevation, 1,879.50 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,879.0	1,710	1,883.0	2,430	1,887.0	3,340
1,881.0	2,050	1,885.0	2,860	1,888.0	3,600

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1830	2300	2250	2200	2150	2130	2060	1980	2130	3240	3100	3010
2	1830	2300	2250	2200	2160	2130	2060	1980	2130	3230	3090	3000
3	1830	2300	2240	2200	2170	2120	2060	1980	2130	3230	3090	3010
4	1820	2290	2240	2200	2170	2120	2060	1970	2130	3230	3090	3010
5	1820	2290	2240	2190	2170	2120	2060	1970	3340	3220	3080	3010
6	1820	2290	2240	2190	2170	2120	2050	1970	3340	3210	3080	3010
7	1810	2280	2240	2190	2170	2120	2050	1960	3340	3200	3070	3010
8	1810	2280	2240	2180	2170	2110	2050	1960	3340	3200	3060	3000
9	1810	2280	2230	2180	2170	2110	2050	1960	3340	3180	3050	3000
10	1810	2280	2230	2180	2170	2110	2050	2030	3340	3180	3050	2990
11	1810	2280	2230	2180	2170	2110	2040	2030	3340	3180	3040	2990
12	1800	2280	2230	2180	2170	2100	2040	2030	3340	3160	3040	2980
13	1800	2280	2230	2180	2170	2100	2040	2030	3330	3160	3030	2980
14	1800	2280	2230	2180	2160	2100	2030	2020	3320	3160	3030	2980
15	1800	2280	2220	2180	2160	2100	2030	2020	3320	3150	3020	2970
16	1790	2270	2220	2180	2160	2100	2020	2020	3340	3150	3010	2960
17	1800	2270	2220	2180	2160	2100	2020	2140	3330	3140	3000	2960
18	2140	2270	2220	2170	2160	2100	2020	2140	3300	3130	3000	2960
19	2320	2270	2220	2170	2150	2100	2010	2140	3320	3120	2990	2950
20	2320	2260	2220	2170	2150	2100	2010	2140	3310	3110	2980	2940
21	2320	2260	2210	2170	2150	2100	2010	2130	3310	3150	2970	2930
22	2320	2260	2210	2170	2150	2090	2000	2130	3300	3180	2970	2930
23	2320	2260	2210	2170	2140	2090	2000	2120	3300	3170	2960	2920
24	2320	2260	2210	2160	2140	2090	1990	2120	3290	3160	2960	2920
25	2320	2260	2210	2160	2140	2080	1990	2130	3280	3150	2950	2920
26	2310	2260	2210	2160	2130	2080	1980	2120	3280	3150	2950	2910
27	2310	2260	2210	2160	2130	2080	1980	2120	3270	3140	2950	2910
28	2310	2260	2200	2160	2130	2080	1980	2120	3260	3130	3020	2900
29	2300	2260	2200	2150	---	2070	1980	2120	3250	3120	3010	2900
30	2300	2250	2200	2150	---	2070	1980	2130	3250	3120	3010	2890
31	2290	---	2200	2150	---	2070	---	2130	---	3100	3000	---
MAX	2320	2300	2250	2200	2170	2130	2060	2140	3340	3240	3100	3010
MIN	1790	2250	2200	2150	2130	2070	1980	1960	2130	3100	2950	2890
(†)	1882.50	1882.09	1881.82	1881.53	1881.42	1881.07	1880.62	1881.41	1886.65	1886.07	1885.65	1885.17
(Φ)	+450	-40	-50	-50	-20	-60	-90	+150	+1120	-150	-100	-110

CAL YR 1985 MAX 2320 MIN 1540 (Φ) +280
WTR YR 1986 MAX 3340 MIN 1790 (Φ) +1050

(†) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

08141500 HORDS CREEK NEAR VALERA, TX

LOCATION.--Lat 31°50'03", long 99°32'26", Coleman County, Hydrologic Unit 12090108, on right bank 74 ft downstream and 50 ft south of bridge on Farm Road 503, 1.1 mi downstream from Hords Creek Dam, 5.7 mi north of Valera, 7.5 mi west of Coleman, and 27.4 mi upstream from mouth.

DRAINAGE AREA.--54.2 mi², approximately, of which 49.3 mi² is above Hords Creek Dam.

PERIOD OF RECORD.--April 1947 to current year.
Water-quality records.--Chemical and bichemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,826.72 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Oct. 1, 1979, at site 0.5 mi downstream at datum 6.84 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow is regulated by Hords Creek Lake (station 08141000) 1.1 mi upstream.

AVERAGE DISCHARGE.--39 years, 1.45 ft³/s (1,050 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,860 ft³/s Apr. 30, 1956 (gage height, 14.73 ft), at site 0.5 mi downstream at datum 6.84 ft lower, from rating curve extended above 1,900 ft³/s; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 23.0 ft July 3, 1932, from information by local residents (discharge not determined). Flood in July or September 1900 reached a stage 3.7 ft higher than that of July 1932, at site 12 mi downstream from station, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,020 ft³/s June 5 at 0800 hours (gage height, 5.38 ft); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	108	.01	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	1.6	.01	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.33	.01	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00
18	.01	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
19	.05	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.01	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.01	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.06	.00	.00	.00	.00	.00	.00	.01	110.41	.07	.00	.00
MEAN	.00	.00	.00	.00	.00	.00	.00	.00	3.68	.00	.00	.00
MAX	.05	.00	.00	.00	.00	.00	.00	.01	108	.01	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.1	.00	.00	.00	.00	.00	.00	.02	219	.1	.00	.00

CAL YR 1985 TOTAL 44.57 MEAN .12 MAX 4.6 MIN .00 AC-FT 88
WTR YR 1986 TOTAL 110.55 MEAN .30 MAX 108 MIN .00 AC-FT 219

08143000 LAKE BROWNWOOD NEAR BROWNWOOD, TX

LOCATION.--Lat 31°50'13", long 99°00'13", Brown County, Hydrologic Unit 12090107, at outlet structure for irrigation canal just upstream from right end of dam on Pecan Bayou, 0.2 mi downstream from Jim Ned Creek, 8 mi north of Brownwood, and 57.1 mi upstream from mouth.

DRAINAGE AREA.--1,565 mi².

PERIOD OF RECORD.--July 1933 to May 1941, November 1944 to September 1986 (discontinued). Fragmentary records July 1934 to April 1935, and October 1940 to May 1941. Prior to October 1970, published as Brownwood Reservoir.

REVISED RECORDS.--WSP 1212: 1948-50. WDR TX-81-3: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is 0.50 ft below National Geodetic Vertical Datum of 1929. Prior to November 1944, nonrecording gages or water-stage recorder at various sites at dam at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam, 1,580 ft long. The dam was completed in 1933 and deliberate impoundment began in July 1933. The capacity table is based on a 1959 survey. The uncontrolled emergency spillway is a broad-crested weir 479 ft long located 800 ft to left of dam. The controlled service spillway consists of two-12-foot horseshoe-shaped concrete conduits. Water is used for irrigation, municipal, and industrial supply by the city of Brownwood (see station 08142500). Flow is affected at times by discharge from the flood-detention pools of 59 floodwater-retarding structures with a combined capacity of 73,310 acre-ft. These structures control runoff from 353 mi² in the Jim Ned Creek and Pecan Bayou drainage basins. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	1,450.0	-
Crest of spillway	1,425.1	143,400
Lowest gated outlet (invert)	1,330.0	-

COOPERATION.--Record of daily gage heights were furnished by Brown County Water Improvement District No. 1. Capacity table was furnished by the U.S. Army Corps of Engineers and by the Soil Conservation Service.

EXTREMES (AT 1800) FOR PERIOD OF RECORD.--Maximum contents, 192,300 acre-ft May 2, 1956 (gage height, 1,431.4 ft); minimum, 11,900 acre-ft July 15, 1934 (gage height, 1,389.5 ft).

EXTREMES (AT 1800) FOR CURRENT YEAR.--Maximum contents observed, 183,000 acre-ft June 3 (gage height, 1,429.9 ft); minimum, 106,700 acre-ft May 5-8 (gage height, 1,419.5 ft).

Capacity table (gage height, in feet, and total contents, in acre-feet)

1,419.0	103,700	1,427.0	148,200
1,423.0	128,700	1,430.0	183,900

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 1800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108500	117500	115700	112700	111500	113300	110900	107300	128000	143400	136400	132200
2	108500	116900	115700	112700	111500	113300	110300	107300	132900	142700	136400	132200
3	108500	116900	115700	112700	114500	113300	110300	107300	144100	142700	135700	146200
4	108500	116900	115700	112700	114500	113300	110300	107300	147800	142700	135700	147000
5	108500	116900	115100	112700	114500	113300	110900	106700	174000	142000	135700	147000
6	109100	116900	115100	112700	115100	112700	110300	106700	183000	142000	135700	146200
7	109100	116900	115100	112700	115100	112700	110300	106700	174000	142000	135000	145500
8	109100	116900	115100	112700	115100	112700	109700	106700	162200	141300	135000	145500
9	109100	116900	114500	112100	115100	112700	109700	113900	159000	141300	135000	144800
10	109100	116900	114500	112100	115100	112700	109700	117500	155800	141300	135000	144800
11	109100	116900	114500	112100	114500	112700	109700	121100	153400	140600	134300	145500
12	108500	116300	114500	112100	114500	112700	109700	124500	151000	140600	134300	145500
13	108500	116300	114500	112100	114500	112700	109700	124500	148600	140600	134300	145500
14	108500	116300	114500	112100	114500	112700	109100	125200	148600	139900	134300	145500
15	108500	116300	113900	112100	114500	112100	109100	125200	148600	139900	133600	146200
16	108500	116300	113900	112100	114500	112100	109100	125200	146200	139900	133600	145500
17	108500	116300	113900	112100	114500	112100	109100	125200	146200	139200	133600	144800
18	108500	116300	113900	112100	114500	112100	109100	125900	145500	139200	133600	144800
19	112700	116300	113900	112100	113900	112100	109100	125900	145500	139200	132900	144100
20	115700	116300	113900	112100	113900	112100	108500	125900	145500	138500	132900	144100
21	118100	116300	113300	112100	113900	111500	108500	125900	145500	138500	132200	144100
22	118100	116300	113300	111500	113900	111500	108500	125900	144800	137800	132200	143400
23	118100	116300	113300	111500	113900	111500	108500	125900	144800	137800	132200	143400
24	118100	115700	113300	111500	113900	111500	108500	126600	144800	137800	131500	143400
25	118100	115700	113300	111500	113900	111500	108500	126600	144100	137800	131500	142700
26	118100	115700	113300	111500	113900	111500	107900	126600	144100	137100	131500	142700
27	118100	115700	113300	111500	113300	110900	107900	126600	144100	137100	131500	142700
28	118100	115700	112700	111500	113300	110900	107900	126600	144100	137100	131500	142000
29	118100	115700	112700	111500	---	110900	107900	126600	143400	137100	132200	142000
30	117500	115700	112700	111500	---	110900	107900	126600	143400	136400	132200	142000
31	117500	---	112700	111500	---	110900	---	126600	---	136400	132200	---
MAX	118100	117500	115700	112700	115100	113300	110900	126600	183000	143400	136400	147000
MIN	108500	115700	112700	111500	111500	110900	107900	106700	128000	136400	131500	132200
(†)	1421.3	1421.0	1420.5	1420.3	1420.6	1420.2	1419.7	1422.7	1425.1	1424.1	1423.5	1424.9
(‡)	+8400	-1800	-3000	-1200	+1800	-2400	-3000	+18700	+16800	-7000	-4200	9800

CAL YR 1985 MAX 128700 MIN 108500 (‡) +10800
WTR YR 1986 MAX 183000 MIN 106700 (‡) +32900

(†) Gage height, in feet, at end of month.
(‡) Change in contents, in acre-feet.

08143600 PECAN BAYOU NEAR MULLIN, TX

LOCATION.--Lat 31°31'02", long 98°44'25", Mills County, Hydrologic Unit 12090107, on right bank 44 ft downstream from bridge on Farm Road 573, 0.6 mi downstream from Blanket Creek, 5.5 mi southwest of Mullin, and 13.6 mi upstream from mouth.

DRAINAGE AREA.--2,073 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,202.93 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow is affected by Lake Brownwood 47 mi upstream (see station 08143000). At end of year, flow from 152 mi^2 above this station and below Lake Brownwood was partly controlled by 41 floodwater-retarding structures with a combined detention capacity of 43,420 acre-ft below the flood-spillway crests.

AVERAGE DISCHARGE.--19 years, 110 ft^3/s (79,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft^3/s Jan. 23, 1968 (gage height, 29.26 ft); no flow at times in 1974, 1978, 1980-81, and 1984-85.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,400 ft^3/s June 8 at 0630 hours (gage height, 29.05 ft); minimum, 0.64 ft^3/s Aug. 26-27 (gage height, 0.58 ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	6.4	8.7	6.7	3.1	4.2	5.0	1.7	135	41	7.6	9.0
2	16	6.9	7.7	6.4	3.4	4.0	5.5	1.7	260	37	148	386
3	11	6.8	7.5	6.2	266	10	4.8	2.8	132	36	80	709
4	9.0	8.4	7.2	5.7	524	13	3.9	9.3	867	36	31	592
5	7.4	8.3	6.7	5.3	84	10	216	7.8	2300	33	25	740
6	6.3	6.8	6.7	4.9	64	7.1	19	5.1	6540	34	16	832
7	5.5	6.2	6.7	4.6	46	5.3	6.4	2.6	10500	34	7.3	796
8	5.6	6.2	6.7	4.5	29	4.7	2.6	4.6	12600	28	6.6	787
9	5.5	6.1	6.7	4.5	21	5.4	1.9	2820	7490	20	5.8	589
10	5.4	5.8	6.9	4.5	17	4.1	3.2	1380	3610	17	4.2	378
11	5.1	5.8	7.5	4.9	14	6.2	23	658	2580	15	4.8	346
12	5.1	5.8	8.2	6.4	12	5.4	15	199	1910	12	4.6	171
13	5.6	5.5	7.8	7.6	12	4.2	11	90	1370	13	3.0	44
14	5.9	6.4	6.8	8.7	11	4.5	7.3	59	954	12	2.4	27
15	8.7	7.1	6.7	6.5	9.6	3.7	4.3	42	711	10	2.4	207
16	7.4	7.2	6.7	5.1	8.6	3.4	3.4	32	575	10	2.1	564
17	7.4	6.6	6.7	4.9	6.9	6.2	3.1	147	428	10	1.6	489
18	8.5	6.5	6.9	4.2	6.4	12	2.2	140	396	9.6	1.4	389
19	558	7.5	7.2	4.0	6.7	21	2.2	59	365	9.5	1.6	327
20	396	7.7	7.2	3.2	6.0	18	2.2	29	353	7.8	2.9	166
21	64	7.7	6.7	2.5	5.5	12	1.5	18	269	34	3.0	39
22	28	7.4	6.7	2.8	5.2	9.1	1.1	13	221	16	3.0	23
23	18	7.0	6.6	3.7	5.1	7.1	.97	10	168	11	2.4	18
24	14	7.1	6.7	3.7	4.7	4.4	.94	8.4	124	9.3	1.5	15
25	11	7.8	6.7	3.5	4.5	3.6	1.4	15	93	11	1.0	14
26	11	9.0	6.7	3.4	4.1	3.9	1.4	21	71	8.6	.72	13
27	9.4	18	6.7	2.8	4.4	4.4	2.7	22	57	7.8	.70	13
28	8.0	21	6.4	2.7	4.2	5.6	1.9	12	49	13	.87	11
29	8.1	15	6.6	2.7	---	7.5	1.5	7.9	48	9.4	1.3	11
30	7.4	11	6.7	2.6	---	6.3	1.4	8.7	42	6.2	18	12
31	6.7	---	6.7	2.4	---	5.7	---	58	---	6.8	10	---
TOTAL	1295.0	245.0	216.4	141.6	1188.4	222.0	356.81	5884.6	55218	558.0	400.79	8717.0
MEAN	41.8	8.17	6.98	4.57	42.4	7.16	11.9	190	1841	18.0	12.9	291
MAX	558	21	8.7	8.7	524	21	216	2820	12600	41	148	832
MIN	5.1	5.5	6.4	2.4	3.1	3.4	.94	1.7	42	6.2	.70	9.0
AC-FT	2570	486	429	281	2360	440	708	11670	109500	1110	795	17290

CAL YR 1985	TOTAL	17200.85	MEAN	47.1	MAX	3530	MIN	.00	AC-FT	34120
WTR YR 1986	TOTAL	74443.60	MEAN	204	MAX	12600	MIN	.70	AC-FT	147700

08143600 PECAN BAYOU NEAR MULLIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,230 microsiemens May 14, 1978; minimum daily, 200 microsiemens July 24, 1984.
WATER TEMPERATURES: Maximum daily, 37.0°C July 18, 1979; minimum daily, 0.5°C Feb. 7, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,900 microsiemens Aug. 31; minimum daily, 235 microsiemens May 17.
WATER TEMPERATURE: Maximum daily, 29.0°C July 1-3, 25, 27, Aug. 18.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT									
08...	0740	5.0	1220	19.5	220	69	64	15	150
JAN									
07...	0830	4.5	1620	7.0	310	100	87	22	210
FEB									
04...	1125	362	579	15.0	160	28	49	10	41
MAY									
06...	0740	5.4	1210	23.5	260	71	71	19	140
JUN									
06...	1320	7200	450	24.0	140	37	46	7.2	25
AUG									
19...	0845	1.4	1360	28.5	320	180	86	25	140

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
08...	5	9.5	153	63	240	0.2	5.3	640
JAN								
07...	5	13	205	100	330	0.5	0.7	890
FEB								
04...	1	7.1	136	51	66	0.2	7.4	310
MAY								
06...	4	11	185	89	210	0.3	1.2	650
JUN								
06...	0.9	6.0	108	27	50	0.3	5.3	230
AUG								
19...	4	7.3	141	130	260	0.4	9.9	740

MONTHLY AND ANNUAL MEANS AND LOADS FOR FEBRUARY 1986 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
FEB. 1986	1188.4	589	324	1040	89	285	41	133	150
MAR. 1986	222.0	1310	723	433	250	153	88	53	280
APR. 1986	356.81	411	226	218	64	62	29	28	100
MAY 1986	5884.6	380	209	3310	53	842	27	429	100
JUNE 1986	55218	393	216	32200	55	8150	28	4170	110
JULY 1986	558.0	1120	616	927	200	305	76	114	250
AUG. 1986	400.79	899	495	536	160	169	62	67	210
SEPT 1986	8717.0	366	201	4730	51	1190	26	614	100
TOTAL	72545.60	**	**	43400	**	11200	**	5600	**
WTD.AVG.	300	403	222	**	57	**	29	**	110

08143600 PECAN BAYOU NEAR MULLIN, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					1500	666	1540	1370	306	850	1470	1880
2					1480	676	1520	1380	581	848	925	440
3					750	702	1530	1360	442	874	879	317
4					571	772	1550	1320	419	910	444	461
5					472	843	280	1230	419	942	420	359
6					426	904	390	1210	420	965	443	388
7					418	944	396	1220	386	992	446	332
8					440	991	402	1210	358	1020	484	310
9					450	1030	400	425	370	1070	574	315
10					455	1070	397	350	366	1080	678	337
11					464	1110	250	278	397	1120	794	348
12					472	1140	266	294	400	1150	886	353
13					483	1190	280	302	415	1180	977	361
14					550	1220	293	316	420	1210	1110	370
15					636	1250	322	336	432	1220	1220	378
16					670	1320	352	358	448	1270	1290	387
17					644	1350	440	235	444	1280	1310	378
18					630	1400	608	250	491	1320	1320	377
19					608	1470	839	264	504	1330	1340	377
20					600	1590	1010	371	470	1350	1360	383
21					590	1690	1080	441	485	1370	1370	400
22					600	1720	1120	525	569	1400	1380	409
23					603	1740	1170	557	533	1450	1420	417
24					606	1750	1220	597	558	1470	1430	426
25					612	1760	1280	581	595	1480	1450	434
26					623	1750	1370	566	632	1480	1460	440
27					637	1720	1420	480	672	1490	1480	442
28					650	1690	1430	452	713	1490	1500	451
29					---	1630	1420	470	750	1480	1520	464
30					---	1530	1410	483	786	1490	1620	463
31					---	1500	---	515	---	1680	1900	---
MEAN					630	1290	866	637	493	1230	1130	440

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					---	12.0	22.0	22.5	24.0	29.0	27.0	25.0
2					---	18.0	22.0	23.0	23.0	29.0	28.5	26.0
3					---	---	21.0	22.0	23.0	29.0	27.0	25.0
4					---	12.0	19.0	21.5	25.0	27.0	24.0	27.0
5					15.0	12.0	20.0	23.0	24.0	27.0	25.0	27.0
6					14.0	14.0	19.0	23.0	23.0	27.0	24.0	---
7					13.0	14.0	19.0	23.0	24.0	27.0	26.0	---
8					12.0	15.0	20.0	24.0	24.0	28.0	26.0	---
9					10.0	20.0	18.0	21.0	25.0	27.0	27.0	26.0
10					9.0	18.0	17.0	17.0	25.0	28.0	26.0	25.0
11					6.0	18.0	18.0	21.0	25.0	27.5	26.5	27.0
12					6.0	18.0	19.0	23.0	25.0	26.0	26.0	26.0
13					6.0	17.0	22.0	23.0	25.0	27.0	26.0	26.0
14					7.0	16.0	21.5	24.0	25.5	27.0	26.0	26.0
15					7.0	15.0	22.0	24.0	25.5	27.0	27.0	26.0
16					9.0	17.0	22.0	23.0	25.0	26.0	27.0	26.0
17					11.0	16.0	20.0	23.0	25.0	26.0	28.0	26.0
18					12.0	16.0	23.0	20.5	25.0	26.0	29.0	26.0
19					14.0	16.0	21.0	18.0	25.0	27.0	28.0	26.0
20					14.0	15.0	21.0	21.0	25.0	27.0	28.0	26.0
21					14.0	15.0	25.0	23.0	25.0	27.0	28.0	27.0
22					11.0	15.0	21.0	26.0	25.5	28.0	27.0	28.0
23					12.0	16.0	24.0	23.0	25.5	27.0	26.0	28.0
24					12.0	16.0	25.0	25.0	25.5	25.0	26.0	28.0
25					12.0	16.0	23.0	24.0	25.5	29.0	26.0	27.0
26					14.0	17.0	22.0	25.0	25.5	28.0	26.0	28.0
27					14.0	21.0	23.0	24.0	25.5	29.0	27.0	27.0
28					14.0	19.0	23.0	23.0	25.5	27.0	26.0	26.0
29					---	19.0	23.5	23.0	26.0	28.0	25.0	27.0
30					---	21.0	23.0	24.0	27.0	28.0	24.0	26.5
31					---	21.0	---	25.0	---	28.0	25.0	---
MEAN					11.0	16.5	21.5	23.0	25.0	27.5	26.5	26.5

08144500 SAN SABA RIVER AT MENARD, TX

LOCATION.--Lat 30°55'08", long 99°47'07", Menard County, Hydrologic Unit 12090109, at downstream side of bridge on U.S. Highway 83 in Menard, 1.1 mi downstream from Las Moras Creek, 1.9 mi upstream from Volkmann Draw, and 116.3 mi upstream from mouth.

DRAINAGE AREA.--1,335 mi^2, of which 6.6 mi^2 probably is noncontributing.

PERIOD OF RECORD.--September 1915 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area. WSP 1512: 1918-20, 1922-25, 1926(M), 1927-32, 1934(M), 1936, 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 1,863.05 ft above National Geodetic Vertical Datum of 1929. Sept. 14, 1915, to Mar. 12, 1924, nonrecording gage at site 635 ft downstream at datum 2.20 ft lower. Mar. 13, 1924, to Feb. 21, 1939, nonrecording gage at site 1,000 ft upstream at datum 2.00 ft higher. Feb. 22, 1939, to Jan. 25, 1940, nonrecording gage at present site and datum. Jan. 26, 1940, to Sept. 19, 1957, water-stage recorder at site 240 ft to right at present datum. Feb. 8, 1962, to Jan. 22, 1963, nonrecording gage at site 600 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Since about 1890, low flow during irrigation season regulated by diversions to Noyes Canal 4.5 mi upstream and diversions by pumping at several locations upstream. Records of the Texas Department of Water Resources show that permits have been granted to irrigate 3,338 acres above station. See record for (station 08144000). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--71 years, 62.1 ft^3/s (45,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft^3/s July 23, 1938 (gage height, 22.2 ft, from floodmark), present site and datum, from rating curve extended above 56,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times as result of upstream diversion to Noyes Canal (station 08144000).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 23.3 ft June 6, 1899, present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 670 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 3	1900	*317	*5.38	No peak greater than base discharge.			

Minimum daily discharge, 3.6 ft^3/s Aug. 15 (result of dam upstream).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	27	27	30	24	15	12	7.5	22	12	6.0	13
2	14	33	27	30	25	19	13	8.1	20	12	5.2	13
3	12	32	14	31	126	17	13	8.1	37	12	5.6	14
4	11	32	11	30	49	17	13	9.0	49	12	5.6	13
5	10	31	10	29	25	17	13	9.9	48	12	6.0	12
6	9.9	29	11	28	20	20	14	10	48	11	5.0	18
7	9.0	29	12	28	18	20	14	9.9	92	9.8	4.1	28
8	8.3	29	14	29	16	20	14	36	47	10	7.7	24
9	8.1	29	19	30	15	20	13	40	43	9.9	5.5	23
10	7.8	29	20	30	16	20	12	48	38	9.6	5.7	20
11	8.6	29	19	31	16	19	14	48	31	9.3	6.2	17
12	10	29	19	30	16	18	14	54	29	9.2	36	15
13	8.9	29	20	30	16	17	14	56	27	8.9	20	14
14	6.7	29	20	30	17	18	12	52	28	10	16	13
15	8.3	29	22	30	17	20	11	50	24	11	3.6	13
16	9.5	29	22	30	18	19	7.3	49	20	9.6	6.2	13
17	9.7	29	23	30	19	16	6.3	52	26	8.7	9.7	11
18	11	29	24	30	16	19	9.8	58	31	8.4	13	4.2
19	18	29	26	23	15	18	10	39	26	8.1	11	8.1
20	17	28	28	20	15	17	10	24	24	8.1	8.8	6.7
21	15	27	29	20	15	16	11	30	22	8.6	8.0	8.1
22	14	27	28	19	14	15	10	53	20	11	8.2	10
23	13	28	29	19	15	15	9.1	50	19	13	8.4	8.6
24	11	30	29	20	15	15	9.0	50	17	11	8.5	11
25	10	30	27	24	15	15	9.9	48	17	9.9	7.5	12
26	9.2	30	28	21	15	14	9.3	54	16	8.9	8.4	12
27	9.0	33	29	20	13	13	8.5	102	15	7.9	13	11
28	9.1	32	29	20	13	13	7.5	53	15	12	16	13
29	8.8	31	30	20	---	13	7.2	40	14	9.8	16	13
30	8.8	30	30	21	---	13	7.4	27	13	9.7	14	14
31	9.9	---	30	23	---	13	---	23	---	8.1	14	---
TOTAL	331.6	887	706	806	614	521	328.3	1198.5	878	311.5	308.9	405.7
MEAN	10.7	29.6	22.8	26.0	21.9	16.8	10.9	38.7	29.3	10.0	9.96	13.5
MAX	18	33	30	31	126	20	14	102	92	13	36	28
MIN	6.7	27	10	19	13	13	6.3	7.5	13	7.9	3.6	4.2
AC-FT	658	1760	1400	1600	1220	1030	651	2380	1740	618	613	805

CAL YR 1985 TOTAL 8173.68 MEAN 22.4 MAX 1180 MIN .38 AC-FT 16210
WTR YR 1986 TOTAL 7296.5 MEAN 20.0 MAX 126 MIN 3.6 AC-FT 14470

08144600 SAN SABA RIVER NEAR BRADY, TX

LOCATION.--Lat 31°00'14", long 99°16'07", McCulloch County, Hydrologic Unit 12090109, on right bank at downstream side of bridge on U.S. Highways 87 and 377, 0.4 mi upstream from Hudson Branch, and 8.4 mi southeast of Brady, and 72.9 mi upstream from mouth.

DRAINAGE AREA.--1,633 mi^2, of which 6.60 mi^2 probably is noncontributing.

PERIOD OF RECORD.--July 1979 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,530.98 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. There are diversions above station for irrigation (see station 08144000). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--7 years, 67.5 ft^3/s (48,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,000 ft^3/s Sept. 8, 1980 (gage height, 25.50 ft); minimum, 0.24 ft^3/s Aug. 1, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest stage since June 1899, 33.8 ft July 23, 1938, from high-water mark on left bank 150 ft upstream from present site.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 3	1400	1,830	5.50	June 6	2200	*11,200	*10.76

Minimum daily discharge, 0.95 ft^3/s Aug. 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	24	30	22	28	27	15	10	139	26	2.3	15
2	19	27	24	25	29	30	20	11	79	21	2.0	12
3	22	27	24	25	460	32	20	11	65	17	2.2	9.1
4	24	31	28	25	263	27	25	14	72	16	2.5	8.7
5	22	36	25	20	105	24	25	17	220	13	3.1	9.1
6	20	36	22	19	64	22	21	18	1400	12	2.6	25
7	19	35	21	18	47	22	19	15	1130	10	2.1	29
8	19	34	20	18	36	28	17	11	137	10	1.7	23
9	19	37	22	24	33	29	17	8.7	46	11	1.3	27
10	20	36	20	28	30	26	17	10	28	10	1.1	29
11	20	32	15	29	28	32	19	11	81	8.2	1.6	26
12	20	36	14	30	28	32	20	9.2	64	6.7	1.9	24
13	19	35	14	30	32	25	19	25	36	5.8	1.3	22
14	37	34	17	31	38	22	15	41	31	4.9	.95	22
15	51	34	18	32	38	21	15	30	24	4.1	.95	18
16	26	35	20	34	38	21	16	21	24	3.3	7.6	18
17	21	35	21	35	38	23	16	27	31	3.0	8.7	16
18	19	35	20	34	38	36	15	22	42	2.7	7.5	16
19	191	34	19	33	41	33	13	15	33	2.3	6.7	16
20	236	27	23	33	40	26	17	43	33	3.0	5.7	13
21	72	27	25	30	30	23	21	56	34	3.5	6.0	10
22	51	30	28	28	31	25	19	37	36	12	5.7	8.7
23	45	33	27	24	32	22	18	26	40	9.2	4.8	6.7
24	38	33	27	27	33	22	15	19	44	6.3	4.8	7.1
25	36	34	22	26	32	19	11	20	42	5.2	4.8	6.4
26	35	35	24	25	34	18	11	21	40	4.9	4.5	5.7
27	33	34	25	20	34	16	9.9	21	38	4.1	3.7	6.4
28	30	33	25	27	30	16	8.3	125	38	4.4	3.2	8.3
29	29	34	26	28	---	16	7.2	123	34	6.0	3.9	10
30	27	39	29	25	---	16	6.9	86	29	4.7	9.1	8.7
31	24	---	25	25	---	16	---	75	---	3.3	10	---
TOTAL	1259	992	700	830	1710	747	488.3	978.9	4090	253.6	124.30	455.9
MEAN	40.6	33.1	22.6	26.8	61.1	24.1	16.3	31.6	136	8.18	4.01	15.2
MAX	236	39	30	35	460	36	25	125	1400	26	10	29
MIN	15	24	14	18	28	16	6.9	8.7	24	2.3	.95	5.7
AC-FT	2500	1970	1390	1650	3390	1480	969	1940	8110	503	247	904

CAL YR 1985 TOTAL 19222.65 MEAN 52.7 MAX 4560 MIN .17 AC-FT 38130
WTR YR 1986 TOTAL 12629.00 MEAN 34.6 MAX 1400 MIN .95 AC-FT 25050

08145000 BRADY CREEK AT BRADY, TX

LOCATION.--Lat 31°08'17", long 99°20'05", McCulloch County, Hydrologic Unit 12090110, on left bank just upstream from bridge on U.S. Highway 377 on North Bridge Street in Brady, 0.4 mi downstream from Live Oak Creek, and 30.4 mi upstream from mouth.

DRAINAGE AREA.--588 mi².

PERIOD OF RECORD.--May 1939 to September 1986 (discontinued).

REVISED RECORDS.--WSP 1512: 1941(M), 1951(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,646.50 ft above National Geodetic Vertical Datum of 1929. Prior to July 9, 1940, nonrecording gage at site 3,600 ft upstream at datum 8.24 ft higher.

REMARKS.--Estimated daily discharges: Mar. 18-28. Records good except below 5 ft³/s, which are fair. The city of Brad returns sewage effluent dowstream from the gage. Since May 22, 1962, flow largely controlled by Brady Creek Reservoi (station 08144900) and partly controlled by several floodwater-retarding structures upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--23 years (water years 1940-62) prior to completion of Brady Creek Reservoir, 25.2 ft³/s (18,260 acre-ft/yr); 24 years (water years 1963-86) regulated, 8.84 ft³/s (6,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,100 ft³/s Sept. 10, 1952 (gage height, 24.80 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, 29.1 ft July 23, 1938, present site and datum (discharge at site 5 mi downstream, 86,000 ft³/s), by slope-area measurement. Flood of Oct. 6, 1930 (second highest since 1882), reached a stage of 25.9 ft (discharge, 50,300 ft³/s, present site and datum), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,270 ft³/s June 3 at 1730 hours (gage height, 10.85 ft); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.29	.22	.05	.08	.22	.00	.00	2.6	.41	.00	1.5
2	.03	.59	.07	.05	.06	.27	.00	.00	342	.34	.00	55
3	.02	.70	.03	.06	2.6	.31	.00	.00	615	.38	.00	8.7
4	.00	.19	.03	.07	.33	.35	.00	.00	136	.49	.02	1.8
5	.00	.10	.03	.07	.17	.39	.00	.00	643	.89	.02	.77
6	.00	.12	.02	.08	.09	.46	.00	.00	510	.75	.01	6.8
7	.00	.15	.02	.09	.07	.56	.00	.00	256	.59	.00	12
8	.00	.20	.03	.10	.08	.55	.00	.03	53	.46	.00	5.4
9	.00	.20	.04	.08	.09	.29	.00	58	39	.35	.00	5.3
10	.00	.12	.05	.03	.09	.27	.00	42	24	.28	.00	4.4
11	.00	.16	.07	.03	.12	.11	.00	4.2	28	.24	.00	2.3
12	.00	.40	.07	.04	.14	.12	.00	1.1	19	.19	.00	1.2
13	.00	.70	.08	.05	.10	.15	.00	.90	10	.12	.01	.86
14	2.1	.79	.08	.03	.03	.21	.00	.88	7.1	.14	.00	.65
15	.88	.31	.08	.03	.03	.44	.00	.36	5.9	.09	.00	.49
16	.23	.20	.10	.03	.04	.58	.00	.28	5.0	.12	.00	.45
17	.22	.10	.12	.03	.06	.76	.00	2.2	6.2	.14	.00	.43
18	.23	.06	.13	.04	.02	2.2	.00	.95	4.4	.14	.00	.42
19	7.5	.09	.13	.04	.02	.88	.00	.50	2.3	.14	.00	.36
20	.99	.11	.15	.04	.03	.68	.00	.24	1.3	.06	.00	.42
21	1.1	.24	.13	.04	.04	.48	.00	.27	1.0	.23	.00	.22
22	1.2	.24	.05	.03	.07	.28	.00	.26	.95	.49	.00	.12
23	1.3	.23	.03	.02	.15	.10	.00	.24	.89	.33	.00	.10
24	1.2	.28	.03	.04	.18	.08	.00	.22	.76	.25	.00	.08
25	1.3	.39	.04	.04	.21	.06	.00	1.2	.55	.12	.00	.06
26	1.3	.67	.06	.04	.26	.06	.00	.64	.55	.08	.00	.12
27	.48	.42	.05	.04	.29	.04	.00	.63	.86	.03	.00	.10
28	.42	.16	.05	.04	.29	.02	.00	.71	1.2	.02	.00	.07
29	.33	.19	.05	.05	---	.00	.00	.75	1.8	.01	.00	.05
30	.27	.24	.05	.05	---	.00	.00	4.8	.79	.00	.00	.04
31	.25	---	.05	.06	---	.00	---	5.4	---	.00	.00	---
TOTAL	21.41	8.64	2.14	1.49	5.74	10.92	.00	126.76	2719.15	7.88	.06	110.21
MEAN	.69	.29	.07	.05	.20	.35	.00	4.09	90.6	.25	.00	3.67
MAX	7.5	.79	.22	.10	2.6	2.2	.00	58	643	.89	.02	55
MIN	.00	.06	.02	.02	.02	.00	.00	.00	.55	.00	.00	.04
AC-FT	42	17	4.2	3.0	11	22	.00	251	5390	16	.1	219

CAL YR 1985 TOTAL 177.08 MEAN .49 MAX 28 MIN .00 AC-FT 351
WTR YR 1986 TOTAL 3014.40 MEAN 8.26 MAX 643 MIN .00 AC-FT 5980

08146000 SAN SABA RIVER AT SAN SABA, TX

LOCATION.--Lat 31°12 47", long 98°43'09", San Saba County, Hydrologic Unit 12090109, on right bank at downstream side of bridge on State Highway 16, 1.2 mi north of San Saba, 2.7 mi upstream from Mill Creek, 4.8 mi downstream from China Creek, and 16.8 mi upstream from mouth.

DRAINAGE AREA.--3,046 mi^{2}, of which 6.6 mi^{2} probably is noncontributing.

PERIOD OF RECORD.--December 1904 to December 1906 (gage heights only), September 1915 to current year. Published as "near San Saba" December 1904 to December 1906 and September 1915 to August 1930.

REVISED RECORDS.--WSP 458: 1915-16. WSP 1282: WDR TX-81-3: Drainage area. WSP 1512: 1918-19(M), 1922, 1931(M), 1935 WSP 1922: 1917.

GAGE.--Water-stage recorder. Datum of gage is 1,162.16 ft above National Geodetic Vertical Datum of 1929. See WSP 1922 for brief history of changes prior to July 8, 1953. Since Oct. 1, 1956, supplementary water-stage recorder 2,780 ft to right of main-channel gage used for floodflows.

REMARKS.--Estimated daily discharges: Feb. 16-18. Records good. Many diversions above station for irrigation and municipal use affect low flow. Flow partly affected by Brady Creek Reservoir (see station 08144900), capacity 90,300 acre-ft. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--71 years, 227 ft^{3}/s (164,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 203,000 ft^{3}/s July 23, 1938 (gage height, 39.3 ft, present site and datum), from rating curve extended above 41,000 ft^{3}/s on basis of slope-area measurement of peak flow; no flow at times in 1918, 1930, 1954-56, 1963-64, and 1984.

Maximum stage since at least 1899, that of July 23, 1938.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 6, 1899, reached a stage of 36.7 ft, present site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^{3}/s and maximum (*):

Date	Time	Discharge (ft^{3}/s)	Gage height (ft)	Date	Time	Discharge (ft^{3}/s)	Gage height (ft)
June 3	1130	3,080	12.42	June 7	1530	*5,550	*17.86

Minimum daily discharge, 17 ft^{3}/s Apr. 29, May 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	56	60	46	42	44	22	22	114	63	20	31
2	33	57	59	48	44	46	20	23	886	63	20	88
3	34	57	60	48	64	47	22	21	2080	58	24	46
4	35	55	60	48	329	42	24	22	1650	56	28	213
5	35	54	59	47	301	42	26	22	787	54	28	105
6	38	53	56	48	169	42	30	20	1610	49	29	108
7	39	55	54	48	112	37	31	19	3010	46	25	232
8	39	57	54	47	81	32	31	17	996	45	21	290
9	37	57	50	47	69	31	27	20	482	43	22	156
10	36	57	48	47	62	32	26	30	365	41	22	106
11	36	54	46	48	60	34	26	35	418	36	24	81
12	35	56	47	48	59	37	27	77	576	33	29	72
13	35	57	47	51	58	33	30	59	424	33	29	66
14	36	58	47	54	58	32	28	40	287	32	27	60
15	37	59	47	55	56	35	25	33	228	31	25	58
16	55	62	47	56	56	34	24	31	205	30	23	52
17	83	63	49	55	56	34	24	45	163	29	22	48
18	59	65	50	55	57	35	19	51	146	26	23	46
19	326	62	48	51	57	34	20	68	177	27	24	42
20	572	56	49	52	56	34	23	52	159	29	23	40
21	396	54	48	52	52	38	23	40	146	29	22	41
22	211	54	47	49	53	38	21	33	128	32	24	38
23	134	55	47	48	53	33	19	29	115	35	24	34
24	103	57	48	46	52	32	19	37	104	30	25	32
25	86	57	48	46	51	32	20	112	95	25	26	31
26	79	58	48	43	51	28	18	69	88	25	24	31
27	69	59	47	43	50	28	20	46	82	26	23	32
28	63	60	48	44	46	26	23	39	77	27	28	32
29	60	60	48	45	---	25	17	35	73	24	34	32
30	57	61	48	39	---	29	18	52	67	22	27	31
31	56	---	48	39	---	29	---	159	---	21	26	---
TOTAL	2953	1725	1562	1493	2254	1075	703	1358	15738	1120	771	2274
MEAN	95.3	57.5	50.4	48.2	80.5	34.7	23.4	43.8	525	36.1	24.9	75.8
MAX	572	65	60	56	329	47	31	159	3010	63	34	290
MIN	33	53	46	39	42	25	17	17	67	21	20	31
AC-FT	5860	3420	3100	2960	4470	2130	1390	2690	31220	2220	1530	4510

CAL YR 1985 TOTAL 50520.2 MEAN 138 MAX 10700 MIN 4.3 AC-FT 100200
WTR YR 1986 TOTAL 33026 MEAN 90.5 MAX 3010 MIN 17 AC-FT 65510

08147000 COLORADO RIVER NEAR SAN SABA, TX
(National stream-quality accounting network)

LOCATION.--Lat 31°13'04", long 98°33'51", San Saba-Lampasas County line, Hydrologic Unit 12090201, near left bank at downstream side of pier of bridge on U.S. Highway 190, 5.2 mi downstream from San Saba River, 9.2 mi east of San Saba, and at mile 474.3.

DRAINAGE AREA.--31,217 mi^2, approximately, of which 11,398 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1915 to October 1922 (published as "near Chadwick"), October 1923 to August 1930 (published as "near Tow"), September 1930 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 458: 1916. WSP 858: 1900(M), 1936(M). WDR TX-81-3: Drainage area. WSP 1512: 1916-18(M), 1936. WSP 1732: 1925-26(M).

GAGE.--Water-stage recorder. Datum of gage is 1,096.22 ft above National Geodetic Vertical Datum of 1929. See WSP 1922 for brief history of changes prior to May 23, 1940.

REMARKS.--No estimated daily discharges. Records good. There are many diversions above station for irrigation, municipal use, and for oilfield operation. Flow is affected by four reservoirs upstream from Winchell and one reservoir in the San Saba River and Pecan Bayou basins; combined capacity, 1,973,000 acre-ft. Flow is affected at times by discharge from the flood-detention pools of 187 floodwater-retarding structures with a combined capacity of 205,700 acre-ft. These structures control runoff from 994 mi^2. Gage-height telemeter at station.

AVERAGE DISCHARGE.--50 years (water years 1917-19, 1921-22, 1924-68) prior to completion of Robert Lee Dam, 1,340 ft^3/s (970,100 acre-ft/yr); 18 years (water years 1969-86) partially regulated, 615 ft^3/s (445,600 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 224,000 ft^3/s July 23, 1938 (gage height, 63.2 ft, present site), based on floodmarks at site then in use; no flow Aug. 27-31, 1954; Aug. 3-13, 1963; July 20 to Aug. 8, Aug. 11-14, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage during period 1878 to July 22, 1938, 58.4 ft Sept. 25, 1900, discharge, 184,000 ft^3/s present site, from floodmarks at former site.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21,500 ft^3/s June 8 at 0200 hours (gage height, 18.68 ft); minimum daily, 19 ft^3/s Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	280	133	100	81	72	39	26	212	220	21	1580
2	39	245	135	100	81	68	31	25	4000	196	20	2340
3	42	211	130	100	83	70	26	30	14200	175	19	6220
4	43	185	124	100	2530	68	28	29	10400	158	41	10200
5	141	167	117	97	1880	68	29	29	7480	222	67	5240
6	273	153	112	97	790	66	28	30	14100	207	112	2920
7	201	145	110	99	433	61	37	26	18800	151	87	3020
8	143	137	108	100	306	61	75	22	19900	127	57	2960
9	118	133	107	100	260	61	61	89	16600	118	37	2970
10	102	128	109	98	231	59	48	3320	10200	106	29	1660
11	91	122	105	97	213	56	41	2620	5690	97	33	1150
12	82	118	101	94	193	54	39	1180	4210	113	42	946
13	73	116	98	92	178	52	39	590	3110	105	37	700
14	66	116	97	90	168	48	42	406	2190	95	35	676
15	65	118	96	90	160	46	37	290	1640	206	33	1430
16	112	118	95	91	152	43	32	209	1280	344	29	1200
17	98	118	95	93	140	41	33	216	1700	212	31	1620
18	106	118	95	97	128	41	31	626	1210	142	33	1300
19	1550	118	95	98	117	39	31	587	926	104	25	1140
20	4920	115	95	98	106	34	24	395	978	80	25	1060
21	5850	113	95	97	97	34	28	269	820	72	26	885
22	1870	111	96	96	87	34	32	275	754	98	26	776
23	1020	110	95	95	85	32	29	206	891	85	30	734
24	643	110	96	95	85	32	25	173	712	79	32	713
25	430	110	97	93	83	32	23	542	594	69	32	698
26	334	112	96	87	81	32	21	331	473	52	33	698
27	303	113	97	83	81	30	23	321	390	40	36	698
28	289	113	98	81	76	30	21	253	332	35	52	698
29	582	113	100	79	---	30	28	173	287	34	30	693
30	370	118	101	78	---	27	28	143	251	29	4290	683
31	308	---	102	81	---	31	---	254	---	25	6240	---
TOTAL	20299	4084	3230	2896	8905	1452	1009	13685	144330	3796	11640	57608
MEAN	655	136	104	93.4	318	46.8	33.6	441	4811	122	375	1920
MAX	5850	280	135	100	2530	72	75	3320	19900	344	6240	10200
MIN	35	110	95	78	76	27	21	22	212	25	19	676
AC-FT	40260	8100	6410	5740	17660	2880	2000	27140	286300	7530	23090	114300

CAL YR 1985 TOTAL 187423 MEAN 513 MAX 33500 MIN 16 AC-FT 371800
WTR YR 1986 TOTAL 272934 MEAN 748 MAX 19900 MIN 19 AC-FT 541400

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1941, September 1947 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: January 1968 to April 1982. Sediment analyses: October 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1947 to current year.
WATER TEMPERATURES: October 1947 to current year.
SUSPENDED SEDIMENT DISCHARGE: December 1950 to September 1962.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,660 microsiemens June 28, 1962; minimum daily, 150 microsiemens Sept. 14, 1981, and Jan. 1, 1985.
WATER TEMPERATURES: Maximum daily, 37.0°C Aug. 3, 1956; minimum daily, 0.0°C Jan. 29, 1948, Jan. 30, 1951.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,660 microsiemens Sept. 28; minimum daily, 331 microsiemens Sept. 2.
WATER TEMPERATURES: Maximum daily, 35.0°C July 20, 27, Aug. 1; minimum daily, 3.0°C Jan. 7.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV 05...	1050	156	550	7.90	15.0	62	9.8	100	1.8	100	160
JAN 15...	1050	88	730	8.00	10.0	7.5	12.0	110	2.0	K5	K8
MAR 11...	1000	52	575	8.10	19.5	18	9.6	110	1.0	23	21
MAY 06...	1145	39	685	8.10	24.0	32	10.0	125	1.7	27	50
JUL 16...	0950	357	780	7.80	28.0	--	9.6	--	0.8	29	35
AUG 28...	1040	56	362	8.10	26.0	160	9.8	125	2.3	27	36

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
NOV 05...	210	52	54	19	33	1	5.1	162	36	59	0.2
JAN 15...	280	47	64	30	41	1	3.8	236	33	72	0.2
MAR 11...	260	40	61	25	30	0.8	3.9	216	27	49	0.2
MAY 06...	270	19	55	32	36	1	3.6	250	21	58	0.2
JUL 16...	240	110	61	22	62	2	5.5	138	80	130	0.2
AUG 28...	130	3	27	15	17	0.7	4.1	126	11	28	0.3

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)
NOV 05...	10	307	320	0.49	0.51	0.01	0.01	0.50	0.52	0.02
JAN 15...	4.9	417	380	0.19	--	0.01	<0.01	0.20	0.11	0.04
MAR 11...	6.5	329	330	--	--	<0.01	<0.01	0.10	0.10	<0.01
MAY 06...	10	367	370	--	--	<0.01	<0.01	<0.10	<0.10	0.01
JUL 16...	12	490	460	--	--	<0.01	<0.01	<0.10	<0.10	0.06
AUG 28...	7.3	268	240	0.37	0.38	0.03	0.02	0.40	0.40	0.12

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 05...	0.02	0.48	0.5	0.09	0.03	0.02	0.06	61	26	98
JAN 15...	0.02	0.36	0.4	0.02	0.01	0.01	0.03	12	2.9	98
MAR 11...	<0.01	--	0.5	0.04	<0.01	<0.01	--	71	10	97
MAY 06...	0.02	0.59	0.6	0.06	0.02	<0.01	--	96	10	100
JUL 16...	0.06	1.2	1.3	0.06	0.01	<0.01	--	73	70	97
AUG 28...	0.09	0.78	0.9	0.29	0.14	<0.01	--	119	18	97

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
NOV 05...	20	2	110	<0.5	<1	<1	<3	2	14	1
JAN 15...	--	--	--	--	--	--	--	--	--	--
MAR 11...	<10	1	99	<0.5	<1	<1	<3	<1	<3	2
MAY 06...	--	--	--	--	--	--	--	--	--	--
JUL 16...	50	2	170	<0.5	<1	<1	<3	3	96	<5
AUG 28...	--	--	--	--	--	--	--	--	--	--

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
NOV 05...	13	<1	<0.1	<10	1	<1	<1	440	<6	<3
JAN 15...	--	--	--	--	--	--	--	--	--	--
MAR 11...	16	3	<0.1	<10	<1	1	1	370	<6	9
MAY 06...	--	--	--	--	--	--	--	--	--	--
JUL 16...	<4	17	0.1	<10	2	<1	<1	790	<6	<3
AUG 28...	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1985	20299	716	402	22000	89	4860	58	3160	260
NOV.	1985	4084	586	326	3590	64	707	38	423	220
DEC.	1985	3230	704	394	3430	84	729	53	461	260
JAN.	1986	2896	732	410	3210	89	692	57	442	260
FEB.	1986	8905	636	355	8530	72	1740	44	1070	230
MAR.	1986	1452	620	346	1360	70	273	42	166	230
APR.	1986	1009	662	370	1010	76	208	47	129	240
MAY	1986	13685	494	274	10100	52	1930	30	1120	190
JUNE	1986	144330	384	212	82500	36	14100	19	7440	150
JULY	1986	3796	690	386	3960	82	836	51	526	250
AUG.	1986	11640	413	228	7170	40	1260	22	682	160
SEPT	1986	57608	675	388	60300	110	17100	82	12700	210
TOTAL		272931	**	**	207000	**	44500	**	28300	**
WTD.AVG.		748	502	281	**	60	**	38	**	180

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	530	534	672	712	781	660	737	670	410	621	624	416
2	610	536	670	758	775	630	648	660	550	579	623	331
3	613	545	675	760	753	620	653	675	457	628	621	360
4	615	550	662	746	700	610	647	668	349	623	570	375
5	1000	559	667	726	650	615	643	660	439	665	452	390
6	1010	564	669	725	637	570	647	676	341	667	570	410
7	1170	566	670	756	572	602	653	673	365	654	663	400
8	1260	575	671	758	530	605	666	632	351	645	659	376
9	1220	577	673	701	523	609	680	600	337	647	668	465
10	1130	588	668	756	553	604	689	340	341	645	676	470
11	1040	596	685	753	579	608	693	420	395	664	650	489
12	1020	586	703	740	586	617	686	426	382	669	625	509
13	1060	592	708	726	587	627	655	500	373	692	607	529
14	1130	594	713	728	584	638	650	519	382	709	628	546
15	1200	600	719	687	580	649	645	702	390	695	614	673
16	1670	602	715	702	582	647	653	724	422	814	609	753
17	1610	599	727	716	581	642	648	773	417	808	607	427
18	1140	603	730	697	583	640	646	617	365	804	554	400
19	915	610	728	691	589	583	620	597	420	805	579	817
20	800	608	729	724	588	619	639	816	468	748	603	1400
21	690	610	728	728	583	648	651	880	510	713	605	1650
22	600	609	735	732	589	644	648	760	495	680	607	1890
23	475	609	734	712	594	638	651	707	518	705	597	2070
24	430	610	746	735	595	642	641	700	543	695	614	1820
25	420	619	750	757	592	635	652	530	551	671	613	2300
26	415	622	745	728	587	610	653	528	542	663	608	2530
27	430	625	733	722	584	590	666	535	541	655	616	2630
28	445	628	730	759	591	617	676	459	560	648	437	2660
29	470	625	722	770	---	600	681	452	582	644	564	2600
30	500	647	719	756	---	615	686	460	600	642	450	2620
31	520	---	710	754	---	627	---	567	---	648	355	---
MEAN	843	593	707	733	608	621	660	611	447	682	589	1110

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	18.0	13.0	12.0	18.0	18.0	24.0	27.0	27.0	32.0	35.0	26.0
2	20.0	20.0	---	15.0	---	20.0	25.0	24.0	27.0	32.0	---	26.0
3	22.0	---	18.0	14.0	15.0	15.0	22.0	27.0	26.0	31.0	30.0	28.0
4	22.0	18.0	15.0	15.0	20.0	19.0	27.0	27.0	26.0	34.0	28.0	28.0
5	22.0	19.0	15.0	11.0	13.0	20.0	---	26.0	26.0	32.0	32.0	---
6	20.0	19.0	15.0	12.0	17.0	13.0	25.0	28.0	25.0	31.0	31.0	27.0
7	22.0	19.0	18.0	3.0	15.0	15.0	23.0	27.0	27.0	32.0	30.0	28.0
8	25.0	19.0	---	10.0	14.0	---	28.0	27.0	29.0	33.0	32.0	27.0
9	24.0	20.0	19.0	7.0	10.0	22.0	21.0	25.0	28.0	33.0	33.0	27.0
10	25.0	23.0	---	13.0	7.0	20.0	---	25.0	29.0	32.0	33.0	28.0
11	25.0	18.0	10.0	14.0	13.0	22.0	24.0	25.0	29.0	30.0	33.0	---
12	27.0	20.0	10.0	11.0	11.0	23.0	25.0	26.0	30.0	32.0	33.0	28.0
13	28.0	24.0	9.0	11.0	10.0	19.0	25.0	27.0	---	31.0	32.0	30.0
14	26.0	23.0	11.0	14.0	15.0	---	23.0	27.0	30.0	31.0	32.0	31.0
15	25.0	17.0	13.0	12.0	17.0	21.0	24.0	25.0	32.0	32.0	31.0	30.0
16	25.0	19.0	10.0	16.0	18.0	23.0	25.0	25.0	32.0	32.0	32.0	28.0
17	23.0	20.0	8.0	17.0	15.0	22.0	24.0	24.0	30.0	32.0	32.0	31.0
18	26.0	23.0	12.0	15.0	20.0	22.0	26.0	20.0	29.0	34.0	32.0	30.0
19	23.0	21.0	10.0	15.0	20.0	16.0	25.0	25.0	29.0	34.0	34.0	30.0
20	23.0	17.0	---	15.0	21.0	15.0	25.0	28.0	---	35.0	32.0	31.0
21	23.0	15.0	13.0	19.0	15.0	17.0	25.0	28.0	32.0	32.0	33.0	---
22	24.0	---	13.0	15.0	15.0	---	26.0	29.0	30.0	34.0	30.0	30.0
23	25.0	20.0	15.0	16.0	17.0	22.0	25.0	29.0	31.0	34.0	30.0	30.0
24	25.0	20.0	13.0	18.0	15.0	21.0	27.0	29.0	31.0	34.0	30.0	30.0
25	25.0	21.0	13.0	17.0	21.0	22.0	28.0	20.0	33.0	33.0	31.0	29.0
26	25.0	23.0	14.0	15.0	---	---	26.0	---	32.0	34.0	30.0	30.0
27	24.0	17.0	13.0	10.0	18.0	20.0	25.0	26.0	33.0	35.0	29.0	29.0
28	23.0	14.0	---	14.0	12.0	23.0	28.0	28.0	34.0	34.0	27.0	30.0
29	23.0	16.0	---	16.0	---	22.0	28.0	29.0	34.0	34.0	30.0	30.0
30	20.0	18.0	---	16.0	---	---	27.0	27.0	34.0	34.0	27.0	---
31	---	---	---	14.0	---	24.0	---	27.0	---	32.0	25.0	---
MEAN	23.5	19.5	13.0	13.5	15.5	20.0	25.0	26.0	30.0	32.5	31.0	29.0

08148000 LAKE BUCHANAN NEAR BURNET, TX

LOCATION.--Lat 30°45'04", long 98°25'06", Burnet County, Hydrologic Unit 12090201, in powerhouse at Buchanan Dam on Colorado River, 1.3 mi upstream from bridge on State Highway 29, 11 mi west of Burnet, and at mile 413.6.

DRAINAGE AREA.--31,910 mi^2, approximately, of which 11,398 mi^2 probably is noncontributing.

PERIOD OF RECORD.--May 1937 to current year. Prior to Oct. 1, 1968, published as Buchanan Reservoir.

REVISED RECORDS.--WSP 1118: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is 0.48 ft above National Geodetic Vertical Datum of 1929 (levels by Lower Colorado River Authority). Prior to July 1938, temporary staff and float gages at same site and datum.

REMARKS.--The lake is formed by two reinforced concrete multiple-arch sections, three banks of tainter gates, a 1,100-foot uncontrolled emergency concrete spillway, and natural ground. A net opening of 1,270 ft is controlled by thirty 33- by 15-foot and by seven 40- by 15-foot tainter gates. The dam was completed and storage began May 20, 1937. Water is used for power development and for irrigation below Columbus. The power generating features consist of three generating units, each with a 12,677 kilowatt capacity. A pump-back unit, with a capacity of 840 ft^3/s, returns water from Inks Lake to Lake Buchanan during off-peak power demand periods. Inflow is largely regulated by twelve major reservoirs with a combined capacity of 2,438,000 acre-ft, of which 1,091,000 acre-ft is for flood control. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08147000. The capacity table is based on a 1925 survey. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam..	1,025.5	-
Crest of gravity overflow spillway (top of conservation storage).....	1,020.0	992,000
Crest of spillway (15 ft gates)..	1,005.0	678,000
Crest of spillway (25 ft gates)..	995.0	505,000
Invert of three 12-foot-diameter penstocks............................	937.0	36,800

COOPERATION.--Capacity curve and gage-height record were furnished by the Lower Colorado River Authority.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 1,010,000 acre-ft Jan. 24, 1968 (gage height, 1,020.8 ft); minimum after initial filling of lake in July 1938, 340,800 acre-ft Sept. 8-10, 1952 (gage height, 983.4 ft).

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents observed, 991,100 acre-ft June 10 (gage height, 1,019.96 ft); minimum, 696,800 acre-ft Oct. 13 (gage height, 1,005.99 ft).

Capacity table (gage height, in feet, and total contents, in acre-feet)

1,005.0	678,000	1,015.0	880,000
1,010.0	775,000	1,020.0	992,000

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	711300	757200	758400	758400	754600	772200	772400	772600	799000	980500	949200	937900
2	710700	758000	758400	758400	755000	772200	771800	770800	804900	980500	945800	940500
3	710500	758000	758200	758600	757400	772400	772200	770400	840800	980500	943800	944700
4	710300	758000	757400	758600	758000	772400	775000	770400	874300	980000	943800	957300
5	709900	758000	757400	759000	765000	773000	775000	770000	890600	979400	942000	966200
6	709200	758400	757400	758400	767400	772800	775000	770000	910100	979400	939800	972200
7	709000	758400	757200	759200	769000	772600	771200	770200	938700	979400	938300	975000
8	707800	758000	757400	759200	769600	772400	772000	770400	969200	979100	936800	979100
9	706900	758200	757400	759000	769600	772600	771600	770800	989900	978200	935000	978200
10	705900	758800	757600	759000	769800	773200	771200	773400	991100	977500	934100	976400
11	702100	759200	760200	758800	769800	773400	771000	779200	985100	976100	933900	974500
12	700000	759200	759400	759000	769800	773400	771400	782800	987200	975000	933000	973600
13	696800	759200	758200	759000	769800	773400	771000	784400	989000	974300	930800	972700
14	700000	759200	757200	759000	770200	773200	771600	785000	989000	973600	929900	970800
15	700200	759600	757200	759000	770200	773200	770800	785600	984400	973100	929700	970600
16	700200	759600	757200	759200	771000	773000	770600	785800	987900	972700	929300	969700
17	700200	759600	757400	759200	771600	772600	771800	790400	988100	972500	929300	967900
18	701400	759600	757800	759600	771600	773000	771800	790400	986700	972700	927700	968100
19	727000	759600	757600	759800	771800	773000	773400	790400	985300	970400	924900	968300
20	728500	759600	757600	755400	772200	772400	772600	791000	984200	969200	921800	970200
21	742600	759600	757600	755200	772200	772000	772400	790400	984900	969700	922000	971800
22	749000	759200	757800	755200	772200	771200	772000	790800	985800	967900	921400	971800
23	752000	759200	758000	755000	772200	771200	771400	791800	987200	966200	921100	971500
24	753800	759200	758000	755000	772200	772200	771400	793600	987400	964600	922900	970600
25	755000	759200	757400	755200	772200	772200	771400	794200	987200	963000	922200	969900
26	756000	759400	757400	755200	772200	772400	771000	795600	984600	961400	918700	968300
27	756400	759200	758000	754600	772600	772600	770600	794600	984400	959600	917600	968100
28	757000	758800	758200	754600	772600	772600	771000	794600	981900	957700	916500	966200
29	756600	758800	758200	754800	---	772600	770800	795000	981200	956100	915600	964900
30	757000	758400	758400	754600	---	772400	770600	796700	980500	954300	916300	963300
31	757000	---	758400	754600	---	772400	---	798600	---	952000	930200	---
MAX	757000	759600	760200	759800	772600	773400	775000	798600	991100	980500	949200	979100
MIN	696800	757200	757200	754600	754600	771200	770600	770000	799000	952000	915600	937900
(†)	1009.10	1009.17	1009.17	1008.98	1009.88	1009.87	1009.78	1011.17	1019.50	1018.26	1017.28	1018.75
(ϕ)	+45000	+1400	0	-3800	+18000	-200	-1800	+28000	+181900	-28500	-21800	+33100

CAL YR 1985 MAX 843100 MIN 565500 (ϕ) +240800
WTR YR 1986 MAX 991100 MIN 696800 (ϕ) +251300

(†) Gage height, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08150000 LLANO RIVER NEAR JUNCTION, TX

LOCATION.--Lat 30°30'15", long 99°44'03", Kimble County, Hydrologic Unit 12090204, on right bank 960 ft upstream from low-water crossing, 1.0 mi east of Junction, 2.6 mi downstream from bridge on Interstate Highway 10, 2.8 mi downstream from confluence of North and South Llano Rivers, 5.3 mi upstream from Johnson Fork, and 114.8 mi upstream from mouth.

DRAINAGE AREA.--1,854.14 mi^2, of which 5.14 mi^2 probably is noncontributing.

PERIOD OF RECORD.--September 1915 to current year.

REVISED RECORDS.--WSP 568: 1915-16, 1918-20, 1922. WDR TX-81-3: Drainage area. WSP 1922: 1920, 1923.

GAGE.--Water-stage recorder. Datum of gage is 1,636.32 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 14, 1925, nonrecording gage, and Aug. 14, 1925, to May 17, 1940, and Aug. 18, 1944, to Oct. 12, 1981, water-stage recorder at site 5,330 ft downstream at datum 6.0 ft lower, designated as regular gage (destroyed by flood of Oct. 13, 1981).

REMARKS.--Estimated daily discharges: May 10-20. Records good. There are diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--71 years, 192 ft^3/s (1.41 in/yr), 139,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 319,000 ft^3/s June 14, 1935 (gage height, 43.3 ft at regular gage, 41.4 ft at former gage 5,330 ft downstream, from floodmarks), from rating curve extended above 54,000 ft^3/s on basis of slope-area measurements of 154,000 and 319,000 ft^3/s; minimum, 3.1 ft^3/s Aug. 16, 17, 1956.
Maximum stage since at least 1875, that of June 14, 1935.

EXTREMES OUTSIDE PERIOD OF RECORD.--There was a major flood in 1889 which was the highest known prior to June 14, 1935.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	1330	*36,600	*20.04	Sept. 26	1400	28,400	18.12
Feb. 3	0700	6,550	8.61				

Minimum daily discharge, 47 ft^3/s May 23, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	169	190	119	103	103	107	89	88	374	101	66	317
2	143	185	114	103	103	107	89	99	253	103	68	531
3	130	178	114	103	1640	105	88	95	218	105	72	200
4	119	173	118	102	646	103	95	91	197	99	78	148
5	111	168	117	101	357	103	93	91	186	95	84	127
6	103	161	115	101	284	101	93	89	173	93	80	147
7	100	152	115	104	251	101	91	89	166	95	75	137
8	97	150	114	115	229	105	91	91	157	92	70	205
9	97	150	113	116	210	103	88	89	147	90	70	163
10	93	148	113	113	199	99	89	129	137	88	69	147
11	94	142	109	110	182	97	95	127	204	85	82	138
12	91	142	111	106	172	95	95	116	225	84	84	127
13	89	142	112	105	166	93	95	101	210	90	85	123
14	111	136	112	104	163	91	91	99	181	93	80	118
15	248	141	112	103	154	93	88	91	167	86	74	112
16	156	142	111	103	149	93	86	88	156	82	73	107
17	130	138	110	103	145	93	88	82	168	81	73	103
18	120	135	110	103	136	95	86	75	163	82	74	100
19	11100	132	108	102	131	93	88	64	162	81	71	97
20	1050	126	107	102	129	88	86	64	154	81	70	95
21	473	129	107	101	120	93	84	54	148	99	67	94
22	366	130	108	98	120	95	86	49	141	104	69	91
23	315	129	107	102	118	93	84	47	137	87	73	89
24	295	131	104	103	118	91	84	47	133	77	77	85
25	269	129	102	100	116	91	84	52	132	78	83	84
26	256	125	105	99	114	89	82	86	127	77	84	5610
27	236	126	105	100	109	89	88	118	121	77	80	921
28	221	125	105	101	107	89	86	329	117	70	83	507
29	210	121	105	101	---	89	88	211	114	68	84	391
30	197	121	105	101	---	89	88	162	109	67	82	343
31	192	---	104	102	---	89	---	477	---	66	85	---
TOTAL	17381	4297	3411	3210	6471	2962	2658	3490	5077	2676	2365	11457
MEAN	561	143	110	104	231	95.5	88.6	113	169	86.3	76.3	382
MAX	11100	190	119	116	1640	107	95	477	374	105	85	5610
MIN	89	121	102	98	103	88	82	47	109	66	66	84
CFSM	.30	.08	.06	.06	.12	.05	.05	.06	.09	.05	.04	.21
IN.	.35	.09	.07	.06	.13	.06	.05	.07	.10	.05	.05	.23
AC-FT	34480	8520	6770	6370	12840	5880	5270	6920	10070	5310	4690	22720

CAL YR 1985 TOTAL 64790 MEAN 178 MAX 11100 MIN 47 CFSM .10 IN. 1.30 AC-FT 128500
WTR YR 1986 TOTAL 65455 MEAN 179 MAX 11100 MIN 47 CFSM .10 IN. 1.32 AC-FT 129800

08150700 LLANO RIVER NEAR MASON, TX

LOCATION.--Lat 30°39'38", long 99°06'32", Mason County, Hydrologic Unit 12090204, on right bank 98 ft downstream from downstream bridge on U.S. Highway 87, 1.0 mi upstream from Beaver Creek, 9.1 mi southeast of Mason, 10.2 mi downstream from James River, and 61.1 mi upstream from mouth.

DRAINAGE AREA.--3,247.14 mi^2, of which 5.14 mi^2 probably is noncontributing.

PERIOD OF RECORD.--March 1968 to current year.

REVISED RECORD.--WDR TX-75-3: 1968(P). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,230.36 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 19, 1971, at site 190 ft upstream at same datum.

REMARKS.--Estimated daily discharges: June 15-22, Aug. 28, 29, and Sept. 1-10, 26-30. Records good except those for estimated daily discharges, which are fair. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years (water years 1969-86), 324 ft^3/s (1.36 in/yr), 234,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 260,000 ft^3/s Sept. 8, 1980 (gage height, 37.00 ft, from floodmark), from rating curve extended above 151,000 ft^3/s on basis of slope-area measurement and discharge measurement of 145,000 ft^3/s; minimum, 16 ft^3/s July 23, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, about 46 ft June 14, 1935, from information by State Department of Highways and Public Transportantion; discharge, about 380,000 ft^3/s; at site 17.0 mi downstream discharge was 388,000 ft^3/s by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	2200	*48,300	*16.16	June 7	0600	5,190	6.91
Feb. 3	2130	3,920	6.14	Sept. 27	0200	20,700	11.43

Minimum daily discharge, 63 ft^3/s Aug. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	238	269	176	140	131	145	106	93	979	167	95	275
2	230	271	170	140	131	143	105	93	657	166	90	778
3	187	265	170	140	728	143	103	93	996	161	92	653
4	167	253	170	139	2050	143	109	93	352	158	100	279
5	154	242	167	140	945	141	105	95	260	155	98	182
6	146	233	167	137	505	139	105	94	291	151	94	479
7	140	224	167	137	347	137	103	91	2150	149	102	283
8	135	216	167	150	290	137	98	90	669	143	100	753
9	134	211	165	152	259	136	101	90	355	143	95	321
10	132	208	164	151	239	139	104	96	276	141	92	242
11	133	209	163	149	224	134	98	113	619	136	89	182
12	127	211	161	147	213	129	94	125	1100	134	120	167
13	122	209	160	143	199	125	89	120	690	130	116	152
14	118	199	158	143	193	125	90	110	370	130	111	146
15	126	195	158	141	190	124	93	99	330	129	108	140
16	219	201	158	140	188	122	93	95	290	133	100	134
17	263	203	158	140	182	123	93	103	270	133	93	125
18	195	202	156	140	175	122	93	102	250	122	86	117
19	7590	196	152	140	171	118	93	97	230	114	70	117
20	8420	185	152	140	167	118	93	95	220	112	67	117
21	1710	179	152	137	162	118	93	92	210	111	63	111
22	1080	179	151	136	158	113	93	89	205	124	63	108
23	773	179	151	134	158	111	93	86	197	130	67	106
24	599	182	148	134	158	112	93	83	196	138	76	100
25	493	182	146	133	153	112	93	95	190	127	81	93
26	428	182	146	133	152	113	93	139	189	117	86	674
27	380	190	146	131	151	111	93	146	185	111	88	4920
28	345	185	144	131	149	111	93	129	180	107	95	1050
29	317	179	144	129	---	109	93	182	175	105	179	563
30	293	179	147	128	---	106	93	276	171	104	125	367
31	277	---	146	129	---	103	---	273	---	99	106	---
TOTAL	25671	6218	4880	4304	8768	3862	2898	3577	13252	4080	2947	13734
MEAN	828	207	157	139	313	125	96.6	115	442	132	95.1	458
MAX	8420	271	176	152	2050	145	109	276	2150	167	179	4920
MIN	118	179	144	128	131	103	89	83	171	99	63	93
CFSM	.26	.06	.05	.04	.10	.04	.03	.04	.14	.04	.03	.14
IN.	.29	.07	.06	.05	.10	.04	.03	.04	.15	.05	.03	.16
AC-FT	50920	12330	9680	8540	17390	7660	5750	7090	26290	8090	5850	27240

CAL YR 1985 TOTAL 116480 MEAN 319 MAX 13300 MIN 53 CFSM .10 IN. 1.34 AC-FT 231000
WTR YR 1986 TOTAL 94191 MEAN 258 MAX 8420 MIN 63 CFSM .08 IN. 1.08 AC-FT 186800

08150800 BEAVER CREEK NEAR MASON, TX

LOCATION.--Lat 30°38'36", long 99°05'44", Mason County, Hydrologic Unit 12090204, on left bank at downstream side of downstream bridge on U.S. Highway 87, 1.8 mi upstream from Llano River, 6.4 mi downstream from Spring Creek, and 11.1 mi southeast of Mason.

DRAINAGE AREA.--215 mi².

PERIOD OF RECORD.--July 1963 to current year.

REVISED RECORDS.--WSP 2122: 1964-65. WRD TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,253.24 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 3, 1978, at site 300 ft upstream at same datum.

REMARKS.--Estimated daily discharges: May 29, 30, June 2-6, and July 26 to Sept. 30. Records good except those for estimated daily discharges, which are fair. No known regulation or diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--23 years, 17.0 ft³/s (1.07 in/yr), 12,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,900 ft³/s Aug. 3, 1978 (gage height, 24.0 ft, from floodmarks), from rating curve extended above 7,400 ft³/s on basis of slope-area measurements of 20,100 and 66,900 ft³/s; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	0830	5,940	a6.96	Aug. 28	2100	3,070	5.28
Feb. 3	0830	3,930	5.90	Sept. 6	1600	3,260	5.50
June 6	2245	*7,280	*7.56	Sept. 8	0430	1,830	4.47

a From floodmark.

Minimum daily discharge, 0.42 ft³/s Aug. 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	4.6	2.9	2.4	1.4	3.2	.79	4.0	24	8.6	.43	15
2	5.8	5.9	2.4	2.4	1.4	3.2	.82	4.7	44	8.0	.42	1.8
3	3.7	7.0	2.1	2.4	996	3.2	.70	5.8	91	8.0	.42	1.3
4	2.5	5.4	2.1	2.4	58	3.2	1.7	4.7	38	7.6	.51	1.0
5	1.9	4.3	2.1	2.4	20	3.1	1.6	4.0	37	6.5	.71	1.0
6	1.4	3.6	2.1	2.3	14	3.1	1.3	4.0	829	5.6	1.8	270
7	1.4	2.9	2.0	2.5	11	2.8	.95	4.1	577	4.9	3.7	20
8	1.6	2.6	1.9	6.0	9.0	2.4	1.0	4.0	33	4.8	4.8	101
9	1.7	2.6	2.1	8.1	8.0	2.4	1.3	4.2	18	3.9	1.8	20
10	1.6	2.6	2.1	5.7	8.0	2.9	3.4	7.2	14	3.1	1.5	9.6
11	1.7	2.5	2.1	4.1	7.1	2.4	3.3	20	31	2.6	1.4	7.2
12	1.6	2.9	3.0	3.2	6.6	2.4	2.6	9.7	77	2.2	1.2	5.0
13	1.6	3.6	4.4	2.9	6.2	2.4	2.1	5.5	71	2.1	1.1	2.1
14	1.6	3.2	3.2	2.6	5.8	2.4	1.8	4.5	109	1.1	1.3	1.7
15	25	2.9	2.7	2.4	5.4	2.4	1.5	3.5	30	2.3	1.3	1.5
16	17	3.1	2.5	2.4	5.0	2.2	1.2	3.0	20	2.4	1.1	1.2
17	11	3.6	2.6	2.4	5.0	1.9	1.0	4.8	115	1.8	1.1	1.2
18	11	3.6	2.6	2.1	4.7	1.6	1.0	6.6	35	1.4	1.4	1.1
19	568	2.7	2.6	2.1	4.2	1.4	1.3	5.2	31	1.0	1.4	1.1
20	53	2.2	2.6	2.1	4.3	1.3	1.7	4.7	46	.71	1.7	1.2
21	26	1.8	2.6	1.8	4.0	1.2	1.2	3.7	25	.61	2.1	1.4
22	21	1.8	2.6	1.6	3.4	1.2	1.1	3.6	18	.55	4.3	1.4
23	16	2.0	2.6	1.6	3.5	1.2	.88	2.6	15	.53	5.0	1.4
24	13	2.1	2.4	1.6	3.5	1.2	.65	2.1	14	.50	5.8	1.4
25	11	2.5	2.1	1.4	3.6	1.4	.66	3.8	13	.55	6.6	1.6
26	9.5	2.6	2.1	1.4	3.8	1.0	.95	33	13	.55	8.0	1.6
27	8.1	3.7	2.1	1.4	3.8	1.0	.66	15	11	.50	8.5	1.6
28	6.8	4.8	2.1	1.4	3.5	1.1	.59	9.2	11	.50	433	1.4
29	5.7	4.7	2.1	1.4	---	1.2	.62	9.6	9.7	.50	947	1.4
30	4.9	3.8	2.3	1.4	---	1.0	2.7	8.2	9.5	.45	181	1.1
31	4.6	---	2.4	1.4	---	.83	---	21	---	.45	46	---
TOTAL	850.7	101.6	75.5	79.3	1210.2	62.23	41.07	226.0	2409.2	84.30	1676.39	478.3
MEAN	27.4	3.39	2.44	2.56	43.2	2.01	1.37	7.29	80.3	2.72	54.1	15.9
MAX	568	7.0	4.4	8.1	996	3.2	3.4	33	829	8.6	947	270
MIN	1.4	1.8	1.9	1.4	1.4	.83	.59	2.1	9.5	.45	.42	1.0
CFSM	.13	.02	.01	.01	.20	.01	.01	.03	.37	.01	.25	.07
IN.	.15	.02	.01	.01	.21	.01	.01	.04	.42	.01	.29	.08
AC-FT	1690	202	150	157	2400	123	81	448	4780	167	3330	949

CAL YR 1985 TOTAL 5591.11 MEAN 15.3 MAX 568 MIN .00 CFSM .07 IN. .97 AC-FT 11090
WTR YR 1986 TOTAL 7294.79 MEAN 20.0 MAX 996 MIN .42 CFSM .09 IN. 1.26 AC-FT 14470

08151500 LLANO RIVER AT LLANO, TX
(National stream-gaging accounting network)

LOCATION.--Lat 30°45'04", long 98°40'10", Llano County, Hydrologic Unit 12090204, on right bank in Llano, 0.4 mi downstream from bridge on State Highway 16, 7 mi upstream from Little Llano River, and 29.3 mi upstream from mouth.

DRAINAGE AREA.--4,197.14 mi^2, of which 5.14 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1939 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 970.01 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. There are many small diversions above station. Part of low flow of Llano River disappears into various formations, many of which are faulted, between stations near Junction and Llano. Gage-height telemeter and rain gage at station.

AVERAGE DISCHARGE.--47 years, 354 ft^3/s (1.15 in/yr), 256,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 232,000 ft^3/s Sept. 10, 1952 (gage height, 32.6 ft), from rating curve extended above 129,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times in 1952-56, 1964, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, 41.5 ft June 14, 1935 (discharge, 380,000 ft^3/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	1200	30,000	13.80	Sept. 7	2345	7,590	7.75
Oct. 20	0145	*47,100	*16.47	Sept. 27	0800	11,600	9.16

Minimum daily discharge, 34 ft^3/s Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	233	240	158	131	146	153	105	96	513	126	41	347
2	272	255	149	131	150	151	105	108	1290	115	35	388
3	260	242	142	131	2220	152	110	99	1760	113	34	680
4	221	231	140	131	2910	152	133	83	938	105	55	618
5	185	222	140	131	1640	151	131	77	512	91	66	388
6	161	210	138	132	853	145	124	82	611	85	59	1630
7	137	201	140	137	580	145	118	84	4790	85	55	1790
8	127	191	140	158	447	150	117	82	1290	78	55	2500
9	121	189	140	155	381	152	109	106	708	72	60	864
10	118	187	146	156	340	155	118	221	438	69	61	501
11	116	189	156	155	306	160	124	292	436	65	58	371
12	122	182	150	154	282	161	127	143	1170	60	54	289
13	119	177	141	150	268	150	117	144	946	55	87	246
14	131	174	136	150	253	148	112	148	619	52	97	221
15	201	170	136	148	241	144	113	133	458	50	86	201
16	145	170	136	145	234	143	115	118	322	52	80	185
17	206	171	140	145	223	145	111	137	806	52	78	176
18	298	171	140	150	212	145	110	124	507	54	74	168
19	9830	174	140	150	202	140	111	117	368	54	62	150
20	17300	161	140	150	194	140	105	99	521	53	51	136
21	2430	157	136	150	182	140	102	84	335	50	48	127
22	1180	151	137	141	172	140	98	76	266	53	46	122
23	784	150	136	142	168	138	92	66	225	66	46	115
24	604	150	136	145	164	135	87	58	198	76	47	106
25	499	153	134	143	168	136	81	77	185	90	50	99
26	433	157	131	140	169	137	81	72	178	91	57	98
27	381	175	127	136	165	140	80	205	168	71	67	4400
28	337	174	127	138	157	144	81	230	161	56	103	1750
29	302	170	127	141	---	145	77	181	145	49	181	873
30	272	167	132	140	---	128	80	233	133	44	338	591
31	253	---	134	140	---	105	---	1080	---	42	192	---
TOTAL	37778	5511	4305	4446	13427	4470	3174	4855	20997	2174	2423	20130
MEAN	1219	184	139	143	480	144	106	157	700	70.1	78.2	671
MAX	17300	255	158	158	2910	161	133	1080	4790	126	338	4400
MIN	116	150	127	131	146	105	77	58	133	42	34	98
CFSM	.29	.04	.03	.03	.11	.03	.03	.04	.17	.02	.02	.16
IN.	.34	.05	.04	.04	.12	.04	.03	.04	.19	.02	.02	.18
AC-FT	74930	10930	8540	8820	26630	8870	6300	9630	41650	4310	4810	39930

CAL YR 1985 TOTAL 148618 MEAN 407 MAX 19700 MIN 34 CFSM .10 IN. 1.32 AC-FT 294800
WTR YR 1986 TOTAL 123690 MEAN 339 MAX 17300 MIN 34 CFSM .08 IN. 1.10 AC-FT 245300

08151500 LLANO RIVER AT LLANO, TX--Continued
(National stream-gaging accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Arpil 1948 to October 1967. Chemical and biochemical analyses: April 1979 to September 1986. Sediment analyses: September 1964, April 1979 to September 1986.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1979 to September 1981.
WATER TEMPERATURES: April 1979 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 487 microsiemens Jan. 3, 1981; minimum daily, 191 microsiemens Sept. 3, 1981.
WATER TEMPERATURES: Maximum daily, 33.0°C on several days during summer of 1980-81; minimum daily, 6.0°C Jan. 29, Feb. 9, Dec. 22, 1980, and Jan. 19, 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
NOV												
05...	1405	246	373	8.10	18.0	2.4	9.6	105	1.2	130	74	190
MAR												
11...	1250	145	385	8.10	20.5	6.0	9.2	107	1.0	22	52	180
JUL												
16...	1320	59	370	7.90	31.0	--	7.9	--	1.4	25	55	170
AUG												
28...	1320	150	345	8.00	27.0	16	9.6	124	1.1	27	53	140

DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
NOV												
05...	25	46	17	11	0.4	2.4	160	19	16	0.2	13	209
MAR												
11...	18	39	20	14	0.5	2.1	162	14	20	0.2	6.6	211
JUL												
16...	14	34	20	13	0.4	2.5	154	13	20	0.3	17	222
AUG												
28...	4	26	18	12	0.5	2.4	135	11	19	0.3	17	184

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SEDI-MENT, SUS-PENDED (MG/L)
NOV												
05...	220	0.86	0.01	0.87	0.02	0.02	0.28	0.3	0.01	<0.01	<0.01	13
MAR												
11...	210	--	<0.01	<0.10	<0.01	0.01	--	0.4	0.02	<0.01	<0.01	22
JUL												
16...	210	--	<0.01	<0.10	0.05	0.05	0.45	0.5	0.02	<0.01	<0.01	23
AUG												
28...	200	--	<0.01	<0.10	0.05	0.02	0.35	0.4	0.02	0.01	<0.01	23

DATE	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV											
05...	8.6	88	20	2	58	<0.5	2	<1	<3	<1	9
MAR											
11...	8.6	99	10	1	57	<0.5	<1	<1	<3	<1	4
JUL											
16...	3.7	95	10	3	56	<0.5	<1	<1	<3	1	10
AUG											
28...	9.3	99	--	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AC AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV											
05...	<1	6	3	<0.1	<10	<1	<1	<1	270	<6	<3
MAR											
11...	2	11	2	<0.1	<10	<1	1	<1	290	<6	3
JUL											
16...	<5	<4	2	<0.1	<10	<1	<1	<1	260	7	<3
AUG											
28...	--	--	--	--	--	--	--	--	--	--	--

08152000 SANDY CREEK NEAR KINGSLAND, TX

LOCATION.--Lat 30°33'30", long 98°28'19", Llano County, Hydrologic Unit 12090201, on left bank at downstream side of bridge on State Highway 71, 6.6 mi upstream from mouth, and 7.3 mi south of Kingsland.

DRAINAGE AREA.--346 mi².

PERIOD OF RECORD.--October 1966 to current year.
Water-quality records.--Sediment records: January 1968 to September 1975.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 862.31 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharge: June 13-19. Records fair. Some diversions above station for irrigation (amount unknown). Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--20 years, 60.0 ft³/s (2.35 in/yr), 43,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft³/s June 16, 1981 (gage height, 17.63 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Sept. 11, 1952, the highest since at least 1881, reached a stage of 34.2 ft (discharge, 163,000 ft³/s), from slope-area measurement at gage site.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	0830	*24,800	*14.56	May 10	0030	3,570	8.62
Dec. 11	0430	6,310	9.56	May 10	1600	2,830	8.29

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	3.7	18	28	10	9.2	7.1	23	100	7.7	.01	4.4
2	37	9.7	14	28	12	9.5	7.0	10	64	7.6	.01	26
3	31	9.7	12	26	42	9.8	7.4	8.2	476	7.0	.03	10
4	26	6.3	12	24	66	10	9.0	5.6	103	6.2	.05	5.6
5	19	4.0	12	20	52	9.7	8.1	5.0	56	5.8	.04	3.8
6	13	3.3	11	19	49	9.4	8.3	4.6	51	5.4	.02	533
7	11	2.4	11	20	47	9.5	8.0	4.1	932	4.7	.01	262
8	9.9	1.4	11	33	44	9.8	7.4	3.7	219	3.8	.01	311
9	9.6	1.3	12	36	42	10	6.8	155	62	3.2	.00	62
10	9.2	1.3	57	35	42	10	7.2	2270	42	2.2	.00	39
11	8.7	.75	1540	33	39	11	7.0	431	41	1.2	.00	29
12	7.7	.67	170	30	36	11	7.0	105	84	.68	.00	23
13	7.1	.98	91	29	35	9.6	6.1	77	150	.46	.00	21
14	10	1.2	67	27	34	9.6	4.6	68	100	.33	.00	43
15	212	.72	58	26	31	9.5	3.2	63	50	.28	.00	30
16	38	.65	56	25	31	8.5	2.5	61	30	.23	.00	25
17	29	.67	52	29	29	8.2	2.3	94	20	.16	.00	9.7
18	24	.67	48	27	27	9.1	3.4	95	40	.16	.00	1.9
19	6240	13	45	25	25	7.3	4.8	72	70	.13	.00	.78
20	1060	19	42	22	24	6.4	4.8	65	51	.13	.00	.43
21	256	16	40	20	20	6.4	2.3	63	55	.12	.00	.29
22	135	16	38	16	16	6.2	1.0	62	41	.10	.00	.23
23	55	16	36	13	13	6.2	.71	61	32	.10	.00	.19
24	33	18	36	12	13	6.1	.44	59	28	.09	.00	.16
25	24	18	34	12	13	6.1	.39	61	23	.08	.00	.12
26	15	18	32	9.7	12	6.1	.37	170	18	.06	.00	.15
27	8.8	24	33	9.3	11	6.1	4.2	235	13	.05	.00	.10
28	7.3	25	32	9.2	9.5	6.2	4.5	110	10	.04	.11	.10
29	6.4	22	31	9.0	---	6.0	1.3	93	8.6	.03	.93	.13
30	5.6	21	31	9.0	---	5.9	17	68	7.9	.02	.31	.05
31	4.6	---	30	9.4	---	6.1	---	282	---	.01	.25	---
TOTAL	8401.9	275.41	2712	670.6	824.5	254.5	154.21	4884.2	2977.5	58.06	1.78	1442.13
MEAN	271	9.18	87.5	21.6	29.4	8.21	5.14	158	99.2	1.87	.06	48.1
MAX	6240	25	1540	36	66	11	17	2270	932	7.7	.93	533
MIN	4.6	.65	11	9.0	9.5	5.9	.37	3.7	7.9	.01	.00	.05
CFSM	.78	.03	.25	.06	.08	.02	.01	.46	.29	.01	.00	.14
IN.	.90	.03	.29	.07	.09	.03	.02	.53	.32	.01	.00	.16
AC-FT	16670	546	5380	1330	1640	505	306	9690	5910	115	3.5	2860

CAL YR 1985 TOTAL 28167.25 MEAN 77.2 MAX 6240 MIN .00 CFSM .22 IN. 3.03 AC-FT 55870
WTR YR 1986 TOTAL 22656.79 MEAN 62.1 MAX 6240 MIN .00 CFSM .18 IN. 2.44 AC-FT 44940

08152900 PEDERNALES RIVER NEAR FREDERICKSBURG, TX

LOCATION.--Lat 30°13'13", long 98°52'10", Gillespie County, Hydrologic Unit 12090206, on left bank at downstream side of bridge on U.S. Highway 87, 2.0 mi upstream from Mueseback Creek, 3.8 mi south of Fredericksburg, and 88.7 mi upstream from mouth.

DRAINAGE AREA.--369 mi^2.

PERIOD OF RECORD.--July 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,564.96 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--7 years, 42.0 ft^3/s (30,430 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft^3/s June 4, 1981 (gage height, 23.23 ft); no flow July 13-18, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Aug. 2, 1978, which is the highest since 1907, reached a stage of 41.6 ft (discharge not determined). The highest known discharge was 64,000 ft^3/s June 1, 1979 (gage height, 34.4 ft, from floodmark), from rating curve extended above a discharge measurement of 42,300 ft^3/s June 1, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	1030	*46,000	a*31.60	June 2	2200	1,670	8.99
May 9	2030	7,820	17.65				

a From floodmark.

Minimum daily discharge, 1.6 ft^3/s Sept. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	52	33	28	18	17	16	19	40	46	4.0	17
2	13	59	29	27	21	18	17	18	258	43	2.7	21
3	9.9	58	27	27	29	19	16	13	609	41	8.1	10
4	8.1	57	27	27	182	20	17	11	192	38	5.4	8.3
5	6.4	62	27	26	67	21	19	9.8	112	33	4.7	6.9
6	5.5	53	28	25	45	21	18	10	81	31	7.9	288
7	5.0	52	28	25	37	21	18	11	143	28	7.2	123
8	4.9	51	28	31	31	21	19	11	118	26	5.8	79
9	5.0	52	28	40	28	22	72	1250	81	22	4.8	16
10	5.0	56	28	40	27	22	117	576	61	19	4.4	9.3
11	5.0	306	314	36	26	22	51	164	54	16	4.3	6.6
12	5.0	103	137	33	24	22	33	87	138	16	8.0	6.5
13	5.0	61	70	31	24	23	28	59	251	18	5.4	7.6
14	81	46	52	31	24	22	24	47	162	22	5.7	7.0
15	176	39	45	25	23	22	19	55	120	19	6.1	5.0
16	30	34	43	25	23	22	17	61	102	17	4.6	3.7
17	17	34	40	29	23	22	17	52	151	14	4.3	3.2
18	13	34	38	30	24	21	18	44	125	13	4.6	2.9
19	10200	32	34	26	25	20	20	34	104	12	3.9	2.4
20	628	30	32	25	24	17	20	28	116	13	3.3	2.3
21	306	27	32	25	20	16	18	22	115	12	2.8	2.2
22	245	27	32	25	19	17	16	19	94	12	2.6	2.1
23	182	27	32	24	20	17	13	16	83	11	2.8	2.2
24	142	27	31	23	20	18	9.7	15	75	11	3.9	2.1
25	115	28	28	23	20	18	8.9	13	69	9.0	6.9	1.6
26	97	28	27	22	17	17	9.2	16	65	9.1	5.5	2.0
27	80	42	27	21	18	17	10	45	60	8.6	5.2	2.0
28	66	48	27	21	18	17	11	38	55	7.3	4.9	1.9
29	58	41	28	20	---	16	11	26	51	7.5	6.2	2.0
30	54	36	28	16	---	16	11	21	47	5.4	9.7	1.8
31	52	---	28	16	---	16	---	58	---	4.2	10	---
TOTAL	12638.8	1602	1408	823	877	600	693.8	2848.8	3732	584.1	165.7	645.6
MEAN	408	53.4	45.4	26.5	31.3	19.4	23.1	91.9	124	18.8	5.35	21.5
MAX	10200	306	314	40	182	23	117	1250	609	46	10	288
MIN	4.9	27	27	16	17	16	8.9	9.8	40	4.2	2.6	1.6
AC-FT	25070	3180	2790	1630	1740	1190	1380	5650	7400	1160	329	1280

CAL YR 1985 TOTAL 27602.33 MEAN 75.6 MAX 10200 MIN .04 AC-FT 54750
WTR YR 1986 TOTAL 26618.8 MEAN 72.9 MAX 10200 MIN 1.6 AC-FT 52800

08153500 PEDERNALES RIVER NEAR JOHNSON CITY, TX

LOCATION.--Lat 30°17'30", long 98°23'57", Blanco County, Hydrologic Unit 12090206, near left downstream end of bridge on U.S. Highway 281, 0.2 mi downstream from Towhead Creek, 1.1 mi northeast of Johnston City, 3.4 mi downstream from Buffalo Creek, and 48.0 mi upstream from mouth.

DRAINAGE AREA.--901 mi^2.

PERIOD OF RECORD.--May 1939 to current year.
Water-quality records.--Chemical analyses: April 1948 to September 1950, October 1971 to September 1985.

REVISED RECORDS.--WSP 1632: 1953(M), 1957, 1958(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,096.70 ft above National Geodetic Vertical Datum of 1929. May 4 to Sept. 13, 1939, nonrecording gage, and Sept. 14, 1939, to Sept. 10, 1952, water-stage recorder at upstream side of bridge at same datum. Sept. 11, 1952, to June 29, 1953, nonrecording gage, and June 30, 1953, to Oct. 7, 1954, water-stage recorder at site 360 ft downstream at same datum.

REMARKS.--Estimated daily discharges, June 18 to July 1. Records fair. There are diversions above station for irrigation. During the year, the city of Fredericksburg discharged varying amounts of sewage effluent into the river upstream from station. The city of Johnson City diverts varying amounts of water from the pool at gage and discharge sewage effluent into the gage. Flow is affected at times by discharge from the flood-detention pools of four floodwater-retarding structures with a combined detention capacity of 4,580 acre-ft. These structures control runoff from 15.6 mi^2 in the Williamson Creek drainage basin. Gage-height telemeter at station.

AVERAGE DISCHARGE.--47 years (water years 1940-86), 177 ft^3/s (128,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 441,000 ft^3/s Sept. 11, 1952 (gage height, 42.5 ft, from floodmark), from rating curve extended above 116,000 ft^3/s on basis of slope-area measurement of 441,000 ft^3/s; no flow at times in 1951-52, 1954, 1956-57, 1963-64, 1967-68, 1971, and 1984-85.
Maximum stage since at least 1859, 42.5 ft Sept. 11, 1952.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1869 reached a stage of 33 ft from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	1430	*74,000	*20.59	June 3	0030	7,620	12.95
Dec. 11	0800	6,810	12.75	June 6	2400	20,200	15.16
Feb. 3	1430	14,300	14.26	June 12	1800	8,930	13.26
May 9	2230	28,300	16.21	June 13	0030	5,280	12.34
June 2	1030	10,300	13.56	Sept. 6	1500	7,410	12.90

Minimum daily discharges, 23 ft^3/s Oct. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	25	165	115	72	121	133	206	250	150	34	41
2	52	156	154	110	79	122	105	138	2850	134	35	58
3	43	102	144	125	3230	125	152	117	2970	133	53	50
4	31	53	142	114	1030	117	132	110	638	121	52	44
5	32	44	142	106	510	120	120	104	324	108	44	40
6	31	33	142	100	364	125	89	96	1030	105	44	2330
7	31	31	136	96	271	119	90	83	4090	95	40	613
8	30	32	132	113	214	116	86	80	826	88	40	309
9	29	35	125	137	193	114	97	3490	409	88	31	189
10	31	38	116	142	178	105	132	6790	246	81	31	109
11	29	42	2960	135	168	109	198	1030	328	71	42	77
12	27	163	809	119	168	110	135	562	2220	64	45	72
13	24	92	377	109	153	106	117	392	1650	66	33	79
14	25	66	297	105	154	105	98	275	405	67	32	72
15	163	59	238	105	155	105	96	539	242	72	31	64
16	218	57	204	105	157	105	88	375	178	64	31	60
17	109	63	200	105	168	105	95	510	1590	61	31	56
18	74	64	182	105	167	105	93	441	800	54	31	51
19	29100	70	165	105	154	82	92	265	900	57	30	40
20	3680	70	155	105	146	79	76	209	700	53	29	37
21	731	77	153	105	137	76	80	174	500	51	27	36
22	385	80	151	98	132	73	94	148	420	47	24	40
23	221	78	147	100	131	67	99	141	360	46	24	40
24	156	143	137	99	132	123	87	125	310	45	25	33
25	116	126	133	94	126	133	100	118	270	45	27	28
26	87	101	132	87	125	142	107	132	230	45	27	35
27	66	1050	133	92	121	178	108	131	210	45	27	37
28	37	468	133	88	111	187	91	128	190	42	27	39
29	26	257	133	88	---	138	88	122	175	39	28	42
30	23	209	126	88	---	72	91	209	160	40	32	40
31	24	---	115	81	---	83	---	419	---	38	34	---
TOTAL	35685	3884	8478	3276	8746	3467	3169	17659	25471	2215	1041	4761
MEAN	1151	129	273	106	312	112	106	570	849	71.5	33.6	159
MAX	29100	1050	2960	142	3230	187	198	6790	4090	150	53	2330
MIN	23	25	115	81	72	67	76	80	160	38	24	28
AC-FT	70780	7700	16820	6500	17350	6880	6290	35030	50520	4390	2060	9440

CAL YR 1985	TOTAL	91806.60	MEAN	252	MAX	29100	MIN	.68	AC-FT 182100
WTR YR 1986	TOTAL	117852	MEAN	323	MAX	29100	MIN	23	AC-FT 233800

08154500 LAKE TRAVIS NEAR AUSTIN, TX

LOCATION.--Lat 30°23'29", long 97°54'24", Travis County, Hydrologic Unit 12090205, in powerhouse at Mansfield Dam on Colorado River, 7.3 mi downstream from Sandy Creek, 12 mi northwest of Austin, and at mile 318.0.

DRAINAGE AREA.-38,755 mi², approximately, of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--September 1940 to current year. Prior to October 1948, published as Marshall Ford Reservoir near Austin.

REVISED RECORDS.--WSP 1342: Drainage area. WDR TX-83-3: 1982.

GAGE.--Nonrecording gage. Datum of gage is 0.12 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Dec. 26, 1940, staff gages on left bank near dam, datum is National Geodetic Vertical Datum of 1929, unadjusted. Dec. 26, 1940, to February 1942, mercury manometer in powerhouse, datum is National Geodetic Vertical Datum of 1929, unadjusted.

REMARKS.--The lake is formed by a 7,098-foot-long concrete gravity, earth, and rockfill dam. Storage began Sept. 9, 1940, and dam was completed in early 1942. Capacity curve is based on an October 1939 survey. Capacity between gage heights 681.0 and 714.0 ft is 778,000 acre-ft and is reserved for flood control. Water is used for power development and for irrigation below Columbus. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08153500. Diversion for municipal and irrigation purposes are pumped from lake, and minor amounts of sewage effluent are discharged into the lake. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam (roadway)..	750.1	-
Design flood..	748.9	3,223,000
Crest of spillway..	714.0	1,950,000
Top of power storage..	681.0	1,172,000
Lowest gated outlet (invert)..	535.8	27,900

COOPERATION.--Records of daily gage heights and capacity curve furnished by Lower Colorado River Authority.

EXTREMES (at 2400) FOR PERIOD OF RECORD.--Maximum contents, 1,770,000 acre-ft May 18, 1957 (gage height, 707.4 ft); minimum, 332,600 acre-ft Aug. 13, 14, 1951 (gage height, 614.2 ft).

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 1,219,000 acre-ft June 13, 14; maximum gage height, 683.35 ft June 13; minimum contents, 834,600 acre-ft Oct. 7, 8 (gage height, 660.66 ft).

Capacity table (gage height, in feet, and total contents, in acre-feet)

660.0	824,700	672.0	1,010,000	680.0	1,152,000
664.0	884,700	676.0	1,080,000	684.0	1,232,000
668.0	945,900				

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	840800	1012000	1052000	1110000	1111000	1181000	1162000	1095000	1102000	1163000	1077000	998900
2	839300	1014000	1054000	1112000	1112000	1175000	1163000	1093000	1107000	1160000	1076000	997300
3	838400	1014000	1054000	1111000	1136000	1171000	1160000	1089000	1119000	1157000	1074000	1000000
4	837900	1015000	1056000	1110000	1150000	1172000	1156000	1086000	1123000	1152000	1071000	1003000
5	837300	1016000	1056000	1115000	1156000	1172000	1153000	1083000	1122000	1148000	1068000	1008000
6	836000	1016000	1057000	1115000	1160000	1172000	1152000	1080000	1125000	1145000	1065000	1030000
7	834600	1016000	1057000	1116000	1167000	1172000	1150000	1076000	1146000	1142000	1063000	1045000
8	834600	1017000	1057000	1115000	1171000	1172000	1151000	1072000	1159000	1137000	1062000	1056000
9	835800	1017000	1058000	1113000	1169000	1173000	1148000	1085000	1166000	1135000	1060000	1066000
10	837500	1017000	1064000	1113000	1175000	1175000	1145000	1106000	1189000	1131000	1057000	1070000
11	838800	1018000	1091000	1113000	1175000	1183000	1142000	1107000	1207000	1127000	1054000	1073000
12	840800	1018000	1094000	1113000	1177000	1173000	1140000	1104000	1215000	1125000	1050000	1074000
13	842900	1021000	1099000	1112000	1179000	1170000	1138000	1104000	1219000	1122000	1049000	1075000
14	845000	1021000	1101000	1112000	1180000	1171000	1135000	1094000	1219000	1119000	1045000	1075000
15	848000	1022000	1102000	1112000	1181000	1171000	1131000	1098000	1216000	1116000	1041000	1074000
16	846800	1022000	1104000	1112000	1183000	1171000	1129000	1096000	1215000	1113000	1037000	1076000
17	846300	1022000	1105000	1112000	1185000	1178000	1127000	1116000	1216000	1110000	1037000	1076000
18	846300	1026000	1107000	1113000	1187000	1169000	1124000	1116000	1216000	1107000	1032000	1078000
19	925300	1028000	1107000	1113000	1191000	1163000	1123000	1115000	1215000	1104000	1030000	1075000
20	976400	1027000	1108000	1113000	1192000	1169000	1122000	1112000	1211000	1101000	1029000	1075000
21	993800	1028000	1110000	1114000	1191000	1167000	1119000	1110000	1208000	1100000	1025000	1070000
22	998000	1028000	1111000	1111000	1192000	1169000	1116000	1108000	1201000	1098000	1021000	1069000
23	999100	1028000	1112000	1109000	1193000	1170000	1113000	1105000	1197000	1095000	1017000	1069000
24	1002000	1031000	1114000	1108000	1193000	1167000	1110000	1103000	1194000	1094000	1016000	1067000
25	1005000	1031000	1114000	1108000	1193000	1166000	1106000	1106000	1190000	1092000	1013000	1067000
26	1007000	1038000	1117000	1108000	1193000	1156000	1104000	1104000	1186000	1091000	1010000	1068000
27	1008000	1047000	1115000	1111000	1191000	1166000	1100000	1103000	1179000	1087000	1010000	1073000
28	1009000	1048000	1114000	1110000	1187000	1165000	1097000	1100000	1176000	1085000	1008000	1077000
29	1008000	1050000	1113000	1110000	---	1165000	1093000	1098000	1171000	1084000	1005000	1080000
30	1008000	1051000	1112000	1110000	---	1164000	1096000	1097000	1168000	1081000	1002000	1080000
31	1009000	---	1111000	1111000	---	1165000	---	1102000	---	1078000	998400	---
MAX	1009000	1051000	1117000	1116000	1193000	1183000	1163000	1116000	1219000	1163000	1077000	1080000
MIN	834600	1012000	1052000	1108000	1111000	1156000	1093000	1072000	1102000	1078000	998400	997300
(†)	671.97	674.40	677.70	677.72	681.76	680.63	676.90	677.24	680.80	675.91	671.33	676.01
(‡)	+166100	+42000	+60000	0	+76000	-22000	-69000	+6000	+66000	-90000	-79600	+86600

CAL YR 1985 MAX 1167000 MIN 834600 (‡) +306,900 acre-ft
WTR YR 1986 MAX 1219000 MIN 834600 (‡) +237,100 acre-ft

(†) Gage height in feet, at end of month.
(‡) Change in contents, in acre-feet.

08154510 COLORADO RIVER BELOW MANSFIELD DAM, AUSTIN, TX

LOCATION.--Lat 30°23'30", long 97°54'28", Travis County, Hydrologic Unit 12090205, at the downstream side of Mansfield Dam, 12.9 mi northwest of the State Capitol at Austin, and at mile 318.0.

DRAINAGE AREA.--38,755 mi², approximately, of which 11,403 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--None. Daily discharge record is based on daily releases from Lake Travis.

REMARKS.--No estimated daily discharges. Records fair.

COOPERATION.--All records of releases were furnished by the Lower Colorado River Authority.

AVERAGE DISCHARGE.--12 years 1,438 ft³/s (1,042,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 25,300 ft³/s Apr. 17-19, 1977; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 4,950 ft³/s June 14, 15; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	879	281	.00	963	.00	3300	766	.00	1110	3170	1760	1310
2	638	.00	.00	1060	.00	3160	821	1840	1280	1600	1490	1380
3	403	.00	.00	799	.00	2110	845	1640	1010	1660	1360	1770
4	489	.00	.00	709	.00	435	1820	1690	1780	1760	1720	1200
5	.00	.00	.00	783	.00	794	1690	1610	1520	2100	1860	1660
6	487	276	.00	910	.00	.00	1500	1840	1460	1820	1340	.00
7	494	336	.00	1280	.00	428	1630	1820	1720	1900	1550	.00
8	494	244	.00	1170	.00	.00	1400	1650	2620	1870	1610	1680
9	86	.00	.00	1070	.00	387	1500	1610	3170	2070	1560	1380
10	333	287	.00	342	.00	1620	1500	1450	3360	2000	1630	1430
11	917	.00	.00	440	.00	1350	1500	1760	3070	2040	1940	1270
12	847	149	147	533	.00	1190	1340	1740	3130	1680	1710	1530
13	464	187	192	761	.00	1820	1340	1430	4500	1500	1720	1090
14	.00	.00	179	571	.00	968	1420	1720	4950	1640	1680	1560
15	589	.00	.00	856	.00	251	1280	388	4950	1540	1680	1090
16	584	.00	.00	319	.00	189	1340	1640	3980	1460	1720	1220
17	531	.00	306	.00	.00	312	1280	529	4420	1500	1610	1500
18	399	.00	405	.00	.00	.00	1380	1740	4840	1530	1710	1320
19	.00	.00	360	.00	202	960	1200	1350	4770	1570	1720	1240
20	.00	.00	82	.00	211	198	1350	1360	3800	1500	1730	1380
21	.00	.00	.00	.00	211	337	1380	1660	3360	1310	1740	1410
22	.00	.00	.00	1500	211	275	1240	1350	3260	1460	1820	748
23	398	.00	.00	998	211	198	1450	1410	3440	1500	1670	1380
24	.00	.00	.00	717	211	.00	1450	1400	3320	1600	1200	1300
25	.00	.00	592	.00	211	.00	1840	981	3260	1520	1650	1070
26	265	.00	926	.00	211	542	1580	1500	3460	1380	1840	1340
27	.00	.00	663	.00	873	451	1810	1420	3320	1530	1560	1040
28	.00	.00	952	.00	2350	299	1640	1450	3250	1520	1530	1590
29	.00	.00	1030	.00	---	306	1850	1630	2640	1600	1440	910
30	.00	.00	1100	.00	---	306	1710	1430	1860	1410	1410	940
31	149	---	1120	.00	---	694	---	1560	---	1550	1520	---
TOTAL	9446.00	1760.00	8054.00	15781.00	4902.00	22880.00	42852	44598.00	92610	52290	50480	36738.00
MEAN	305	58.7	260	509	175	738	1428	1439	3087	1687	1628	1225
MAX	917	336	1120	1500	2350	3300	1850	1840	4950	3170	1940	1770
MIN	.00	.00	.00	.00	.00	.00	766	.00	1010	1310	1200	.00
AC-FT	18740	3490	15980	31300	9720	45380	85000	88460	183700	103700	100100	72870

CAL YR 1985 TOTAL 324889.00 MEAN 890 MAX 2300 MIN .00 AC-FT 644400
WTR YR 1986 TOTAL 382391.00 MEAN 1048 MAX 4950 MIN .00 AC-FT 758500

08154510 COLORADO RIVER BELOW MANSFIELD DAM, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: June 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3
MAR 27...	0925	478	7.70	12.5	9.1	85	0.4	190	43
MAY 02...	1150	483	7.40	14.0	6.2	60	0.9	180	32
JUL 16...	1455	483	7.20	17.5	2.7	28	0.2	190	45
AUG 26...	1245	459	7.30	20.0	2.6	29	0.2	180	29

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
MAR 27...	43	19	25	0.8	3.6	143	29	42	0.2
MAY 02...	42	18	24	0.8	3.5	147	25	48	0.2
JUL 16...	44	19	24	0.8	3.5	143	29	40	0.2
AUG 26...	43	17	21	0.7	3.4	148	28	38	0.2

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
MAR 27...	7.1	250	<0.01	0.30	0.03	0.27	0.3	<0.01
MAY 02...	6.8	260	<0.01	0.30	0.04	0.26	0.3	0.01
JUL 16...	7.0	250	<0.01	0.20	0.02	0.28	0.3	<0.01
AUG 26...	6.8	250	<0.01	<0.10	0.10	0.2	0.3	0.02

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX

LOCATION.--Lat 30 22'19", long 97 47'04", Travis County, Hydrlogic Unit 12090205, on right bank at downstream side of bridge at Loop 360, 1.0 mi upstream from West Fork Bull Creek and Farm Road 2222, and 7.1 mi northwest of the State Capitol Building in Austin.

DRAINAGE AREA.--22.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1976 to July 1978 (operated as a flood-hydrograph partial station only), July 1978 to current year.

GAGE.--Water-stage recorder, concrete control, and crest-stage gage. Datum of gage is 534.08 ft above National Geodetic Vertical Datum of 1929 (levels from city of Austin bench mark).

REMARKS.--Estimated daily discharges: Dec. 10, 11, May 18-23, Aug. 12-25, and Sept. 22. Records good except those for estimated daily discharges, which are poor. No known regulation or diversion above station. There are two recording rain gages in the watershed. This station is part of a hydrologic research project to study the rainfall-runoff relationship for the Austin urban-rural areas.

AVERAGE DISCHARGE.--8 years, 10.9 ft³/s (6.64 in/yr), 7,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft³/s May 13, 1982 (gage height, 11.96 ft); no flow for several days in 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	1130	*3250	*7.20	May 15	0900	2360	6.48
Nov. 24	1015	256	3.95	May 17	1500	971	5.30
Nov. 27	0645	484	4.53	May 25	0430	821	5.12
Dec. 10	2400	259	3.96	June 2	2345	218	6.17
Feb. 3	1645	786	5.07	June 11	1015	715	4.95
May 9	2215	358	4.22	Sept. 6	0930	1450	5.82

Minimum daily discharge, 0.02 ft³/s Aug. 2-4, 19-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	6.9	32	8.9	8.5	7.5	5.6	72	67	5.6	.03	.37
2	1.2	22	28	9.5	7.8	6.8	6.2	20	52	3.4	.02	15
3	1.2	8.9	28	8.8	187	6.8	6.2	13	117	2.8	.02	9.4
4	1.2	7.4	27	9.1	59	6.2	6.8	11	60	2.3	.02	.38
5	1.2	6.8	24	9.0	34	5.6	6.8	9.6	51	1.5	.71	.14
6	1.2	6.3	22	8.9	29	4.8	6.8	8.6	42	3.0	1.6	213
7	1.1	5.9	20	9.1	27	4.8	8.9	7.0	36	2.5	.10	18
8	1.0	6.1	20	9.8	24	4.8	9.7	5.4	33	2.0	.13	7.0
9	1.1	6.1	18	10	24	4.8	4.8	31	36	1.8	.06	2.8
10	1.5	6.1	40	10	22	4.8	3.5	44	31	1.2	.03	3.1
11	1.1	15	84	9.8	18	4.8	3.0	13	172	.63	.80	1.8
12	1.0	9.7	38	9.7	18	5.6	3.7	8.7	57	.75	.25	1.0
13	1.0	8.4	30	9.7	17	5.6	4.3	8.6	45	.21	.09	.91
14	2.8	8.4	25	9.7	16	6.2	3.3	7.2	32	.20	.07	.97
15	14	14	24	9.7	14	6.8	3.3	305	27	.11	.06	.39
16	4.3	18	24	9.7	14	6.8	3.7	38	23	.06	.05	.30
17	8.4	13	23	9.7	13	6.8	4.3	215	45	.11	.04	.29
18	6.7	11	21	9.0	11	8.9	5.1	98	27	.03	.04	.29
19	387	18	17	7.5	10	6.8	6.1	59	26	.04	.02	.09
20	37	18	17	7.9	9.7	8.2	7.2	43	21	.13	.02	.14
21	21	13	17	8.2	9.7	6.8	6.2	33	16	.17	.02	.18
22	18	12	17	8.2	9.7	6.2	4.5	25	14	.18	.02	.40
23	14	11	17	7.7	8.9	6.2	4.7	18	12	.14	.10	1.2
24	12	48	14	7.5	8.2	6.2	5.2	15	11	.08	.35	1.1
25	10	24	13	7.5	8.9	4.8	4.3	240	9.7	.07	.40	.60
26	8.7	19	12	7.8	8.9	4.1	3.9	44	9.8	.11	.03	.33
27	7.4	315	12	8.2	8.9	4.1	3.7	34	8.4	.10	.04	.33
28	6.2	95	12	9.3	8.1	4.1	4.1	29	6.3	.14	.04	.28
29	6.0	58	11	10	---	4.1	5.5	24	6.4	.05	.05	.24
30	5.7	45	11	11	---	4.1	12	20	6.3	.03	.04	.21
31	5.7	---	9.9	9.6	---	4.1	---	61	---	.03	.05	---
TOTAL	590.2	856.0	707.9	280.5	634.3	178.2	163.4	1560.1	1099.9	29.47	5.30	280.24
MEAN	19.0	28.5	22.8	9.05	22.7	5.75	5.45	50.3	36.7	.95	.17	9.34
MAX	387	315	84	11	187	8.9	12	305	172	5.6	1.6	213
MIN	1.0	5.9	9.9	7.5	7.8	4.1	3.0	5.4	6.3	.03	.02	.09
CFSM	.85	1.28	1.02	.41	1.02	.26	.24	2.26	1.65	.04	.01	.42
IN.	.98	1.43	1.18	.47	1.06	.30	.27	2.60	1.83	.05	.01	.47
AC-FT	1170	1700	1400	556	1260	353	324	3090	2180	58	11	556

CAL YR 1985 TOTAL 6393.59 MEAN 17.5 MAX 728 MIN .34 CFSM .78 IN. 10.67 AC-FT 12680
WTR YR 1986 TOTAL 6385.51 MEAN 17.5 MAX 387 MIN .02 CFSM .78 IN. 10.65 AC-FT 12670

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: April 1978 to current year. Pesticide analyses: June 1978 to September 1986. Radiochemical analyses: January to Arpil 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT												
19...	1015	143	334	--	--	60	420	--	--	2.8	35000	55000
19...	1045	1070	318	7.60	--	30	140	--	--	--	--	--
19...	1115	2950	278	--	--	--	--	--	--	4.6	70000	88000
19...	1145	2950	245	7.50	--	80	2800	--	--	--	--	--
19...	1215	2660	241	--	--	4000	2200	--	--	--	--	--
19...	1245	1900	326	--	--	--	--	--	--	5.0	57000	84000
NOV												
24...	1000	227	426	--	--	25	2900	--	--	2.9	58000	48000
24...	1030	193	532	--	--	--	--	--	--	2.8	K190000	22000
24...	1100	109	498	7.80	--	30	1000	--	--	--	--	--
24...	1130	87	446	--	--	45	190	--	--	--	--	--
24...	1200	107	429	--	--	--	--	--	--	2.1	K16000	37000
JAN												
28...	0745	2.8	627	8.80	7.5	7	0.6	11.6	--	0.1	K9	K12
FEB												
03...	1315	130	360	--	--	--	--	--	--	3.6	K11000	24000
03...	1345	166	323	--	--	30	760	--	--	--	--	--
03...	1415	305	422	--	--	30	360	--	--	--	--	--
03...	1445	763	460	--	--	--	--	--	--	3.6	K18000	K14000
03...	1515	730	366	--	--	30	130	--	--	--	--	--
03...	1545	717	309	7.80	--	--	--	--	--	6.1	K14000	K12000
APR												
07...	0835	5.0	594	7.80	21.0	5	0.6	8.4	95	1.4	160	2600
MAY												
09...	2130	171	355	--	--	100	230	--	--	5.0	74000	57000
09...	2200	241	402	--	--	--	--	--	--	--	--	--
09...	2230	241	373	--	--	--	--	--	--	3.6	41000	52000
09...	2300	177	350	--	--	--	--	--	--	--	--	--
09...	2330	146	364	7.90	--	--	--	--	--	--	--	--
09...	2400	112	426	--	--	100	250	--	--	--	8000	28000
JUN												
17...	0815	58	672	8.10	24.5	5	5.5	7.8	95	0.8	1200	1100
AUG												
25...	0950	0.03	711	7.50	26.0	5	5.4	4.5	56	0.6	3700	1100

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT												
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	130	33	38	8.2	13	0.5	2.4	96	31	22	0.1	6.0
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	100	23	31	5.4	10	0.5	2.8	77	24	14	0.1	5.0
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	210	48	60	15	22	0.7	2.4	164	42	35	0.2	8.3
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
28...	290	83	81	22	31	0.8	1.5	210	60	52	0.2	6.3
FEB												
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	130	24	37	8.1	14	0.6	2.7	102	26	17	0.2	5.7
APR												
07...	250	56	67	19	32	0.9	2.1	190	57	51	0.3	8.0
MAY												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	140	24	41	9.6	17	0.6	2.3	118	32	19	0.2	7.3
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
17...	280	42	78	21	28	0.8	2.0	239	47	37	0.2	9.6
AUG												
25...	260	100	71	21	45	1	4.2	162	100	66	0.3	11

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
OCT												
19...	--	1150	68	0.38	0.02	0.40	0.11	0.89	1.0	0.16	29	--
19...	180	5750	408	0.13	0.07	0.20	0.29	4.1	4.4	0.68	72	--
19...	--	--	--	0.30	0.10	0.40	0.36	1.0	1.4	0.55	130	--
19...	140	2210	200	0.30	0.20	0.50	0.60	4.5	5.1	0.72	55	--
19...	--	2340	536	0.58	0.12	0.70	0.30	1.3	1.6	0.43	52	--
19...	--	--	--	0.60	0.10	0.70	0.24	2.0	2.2	0.42	32	--
NOV												
24...	--	4500	372	--	<0.01	0.40	0.04	3.3	3.3	0.61	>140	--
24...	--	--	--	--	<0.01	0.50	0.05	2.0	2.1	0.31	36	--
24...	280	394	162	--	<0.01	0.50	0.07	1.1	1.2	0.16	12	--
24...	--	298	62	0.49	0.01	0.50	0.06	1.2	1.3	0.15	11	--
24...	--	--	--	0.49	0.01	0.50	0.05	1.0	1.1	0.13	9.7	--
JAN												
28...	380	2	2	--	<0.01	0.40	0.01	0.29	0.3	<0.01	1.7	<1
FEB												
03...	--	--	--	0.37	0.03	0.40	0.03	0.67	0.7	0.06	110	--
03...	--	1040	92	0.48	0.02	0.50	0.02	1.2	1.2	0.05	56	--
03...	--	882	70	0.47	0.03	0.50	0.04	3.3	3.3	0.02	39	--
03...	--	--	--	0.57	0.03	0.60	0.04	0.86	0.9	0.02	110	--
03...	--	1100	136	0.67	0.03	0.70	0.04	1.5	1.5	0.06	20	--
03...	170	--	--	0.68	0.02	0.70	0.02	0.68	0.7	0.09	21	--
APR												
07...	350	2	1	--	<0.01	0.20	0.01	0.29	0.3	<0.01	7.1	--
MAY												
09...	--	512	58	0.37	0.03	0.40	0.06	1.1	1.2	0.13	20	--
09...	--	--	--	0.28	0.02	0.30	0.04	1.5	1.5	0.12	26	1
09...	--	--	--	0.38	0.02	0.40	0.07	1.0	1.1	0.10	19	--
09...	--	--	--	0.48	0.02	0.50	0.06	1.0	1.1	0.13	17	2
09...	200	--	--	0.48	0.02	0.50	0.07	1.1	1.2	0.12	13	--
09...	--	370	54	0.47	0.03	0.50	0.07	0.83	0.9	0.08	12	--
JUN												
17...	370	20	9	--	<0.01	0.50	0.03	0.27	0.3	0.02	4.4	--
AUG												
25...	420	9	4	0.09	0.01	0.10	0.06	0.34	0.4	0.08	5.0	--

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
NOV											
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JAN											
28...	51	<1	<10	<1	<3	<1	4	<0.1	<1	<1	6
FEB											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	--	--	--	--	--	--	--	--	--	--	--
09...	33	<1	<10	5	6	<1	<1	<0.1	<1	<1	7
09...	--	--	--	--	--	--	--	--	--	--	--
09...	24	<1	<10	11	10	3	<1	<0.1	<1	<1	7
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
JUN											
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
25...	--	--	--	--	--	--	--	--	--	--	--

08154900 LAKE AUSTIN AT AUSTIN, TX

LOCATION.--Lat 30°18'53", long 97°47'10", Travis County, Hydrologic Unit 12090205, at city of Austin Waterplant No. 2 and 1.5 mi upstream from Tom Miller Dam on the Colorado River at Austin.

DRAINAGE AREA.--38,846 mi², of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1978 to current year.

301739097471601 - LAKE AUSTIN SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
15...	1012	1.00	481	8.10	11.0	9.9	91
15...	1013	10.0	482	8.10	11.0	9.8	90
15...	1014	20.0	485	8.10	11.0	9.7	89
15...	1015	31.0	486	8.10	11.0	9.6	88

301739097471201 - LAKE AUSTIN SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
JAN												
15...	0945	1.00	481	8.30	11.0	2.00	3	2.0	9.8	90	0.1	K3
15...	0950	10.0	481	8.30	11.0	--	--	--	9.8	90	--	--
15...	0955	20.0	487	8.30	11.0	--	--	--	9.8	90	--	--
15...	1000	30.0	483	8.30	11.0	--	--	--	9.8	90	--	--
15...	1005	40.0	484	8.30	11.0	--	--	--	9.7	89	--	--
15...	1010	54.0	484	8.60	11.0	--	7	2.6	9.8	90	0.1	--
MAY												
16...	0725	1.00	467	8.00	19.5	1.10	5	3.2	7.5	84	0.6	130
16...	0727	10.0	467	8.00	18.5	--	--	--	7.3	80	--	--
16...	0729	20.0	467	7.80	18.0	--	--	--	7.0	76	--	--
16...	0731	30.0	467	7.80	17.5	--	--	--	7.0	75	--	--
16...	0733	40.0	467	7.70	17.5	--	--	--	7.0	75	--	--
16...	0735	52.0	467	7.70	17.5	--	5	42	6.0	64	0.7	--
AUG												
18...	1015	1.00	481	8.00	27.5	2.10	5	2.3	6.5	--	0.3	<4
18...	1017	10.0	478	7.70	24.5	--	--	--	5.6	68	--	--
18...	1019	20.0	478	7.60	23.0	--	--	--	4.6	55	--	--
18...	1021	30.0	478	7.60	23.0	--	--	--	4.3	51	--	--
18...	1023	40.0	478	7.50	22.5	--	--	--	3.5	41	--	--
18...	1025	50.0	478	7.40	22.5	--	5	18	2.9	34	0.4	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
JAN												
15...	K1	200	51	47	20	26	0.8	3.1	149	25	47	0.2
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	200	53	48	20	26	0.8	3.1	149	24	46	0.2
MAY												
16...	300	180	34	43	18	24	0.8	3.8	148	30	39	0.2
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	180	29	41	18	22	0.7	3.4	148	30	43	0.2
AUG												
18...	58	180	29	42	19	20	0.7	3.3	154	25	41	0.1
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	180	25	42	18	20	0.7	3.3	154	25	40	0.3

LAKE AUSTIN AT AUSTIN, TX--Continued

301739097471201 - LAKE AUSTIN SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
JAN												
15...	6.4	260	1	<1	0.19	0.01	0.20	0.01	0.39	0.4	0.01	3.7
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	0.19	0.01	0.20	0.02	0.38	0.4	0.01	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	6.5	260	5	5	0.19	0.01	0.20	0.04	0.46	0.5	0.01	4.5
MAY												
16...	7.2	250	7	5	--	<0.01	0.20	0.02	0.28	0.3	0.01	2.3
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	<0.01	0.20	0.03	0.37	0.4	0.03	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	7.6	250	59	15	--	<0.01	0.30	0.06	0.34	0.4	<0.01	3.0
AUG												
18...	7.1	250	9	4	--	<0.01	<0.10	0.01	0.29	0.3	0.04	3.6
18...	--	--	--	--	--	<0.01	<0.10	0.03	0.27	0.3	0.02	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	<0.01	<0.10	0.03	0.37	0.4	0.03	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	7.6	250	12	6	--	<0.01	<0.10	0.08	0.32	0.4	0.23	4.4

DATE	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN												
15...	1	66	<1	<10	<1	<3	<1	3	<0.1	<1	<1	16
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	40	--	<10	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	1	66	<1	<10	<1	6	<1	3	<0.1	<1	<1	16
MAY												
16...	<1	66	<1	<10	1	3	<1	<1	<0.1	<1	<1	8
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	<10	--	<10	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	<1	64	<1	<10	1	7	1	44	<0.1	<1	<1	7
AUG												
18...	--	--	--	--	--	<20	--	<10	--	--	--	--
18...	--	--	--	--	--	10	--	<10	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	20	--	<10	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	<20	--	50	--	--	--	--

DATE	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	METHOMYL TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)
JAN											
15...	<0.1	<0.1	<0.1	<2.0	<0.1	<0.1	<0.1	<2.0	<2.0	<0.1	<0.1
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	<0.1	<0.1	<0.1	<2.0	<0.1	<0.1	<0.1	<2.0	<2.0	<0.1	<0.1
MAY											
16...	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.1	<0.1
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.1	<0.1
AUG											
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

LAKE AUSTIN AT AUSTIN, TX--Continued

301739097470901 - LAKE AUSTIN SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
15...	1020	1.00	482	8.10	11.0	9.7	89
15...	1025	10.0	483	8.10	11.0	9.7	89
15...	1030	13.0	484	8.10	11.0	9.6	88
AUG							
18...	1000	1.00	478	8.00	27.0	6.5	83
18...	1002	10.0	478	7.80	25.0	5.7	70
18...	1004	20.0	478	7.60	23.0	4.8	57
18...	1006	24.0	478	7.60	23.0	4.5	53

302043097472401 - LAKE AUSTIN SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NITRATE TOTAL (MG/L AS N)
JAN									
15...	1055	1.00	467	8.10	12.0	2.40	9.7	91	--
15...	1100	10.0	467	8.10	11.5	--	9.7	90	--
15...	1105	20.0	478	8.10	11.5	--	9.6	89	--
15...	1110	31.0	506	8.30	11.5	--	9.7	90	0.29
MAY									
16...	0800	1.00	464	8.00	20.5	0.7	7.7	87	--
16...	0802	10.0	464	8.00	20.0	--	7.7	86	--
16...	0804	20.0	478	7.80	18.0	--	7.4	80	--
16...	0806	26.0	478	7.60	17.0	--	7.4	78	--
AUG									
18...	0930	1.00	482	8.00	27.5	2.30	6.5	--	--
18...	0932	10.0	477	7.60	23.5	--	5.3	64	--
18...	0934	20.0	477	7.60	23.0	--	5.1	61	--
18...	0936	27.0	477	7.60	23.0	--	4.8	57	--

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN								
15...	<0.01	0.20	0.02	0.38	0.4	0.01	30	<10
15...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
15...	0.01	0.30	0.04	0.66	0.7	0.03	20	<10
MAY								
16...	<0.01	0.20	0.03	0.37	0.4	0.03	30	<10
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	<0.01	0.20	0.02	0.28	0.3	0.03	20	<10
AUG								
18...	<0.01	<0.10	0.02	0.38	0.4	0.03	10	<10
18...	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--
18...	<0.01	<0.10	0.05	0.25	0.3	0.02	20	10

302044097472301 - LAKE AUSTIN SITE BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
15...	1115	1.00	471	8.00	11.5	9.6	89
15...	1120	12.0	473	8.00	11.5	9.5	88
AUG							
18...	0940	1.00	482	8.00	27.5	6.6	--
18...	0942	10.0	477	7.60	23.5	5.0	60
18...	0944	12.0	477	7.60	23.5	5.2	62

LAKE AUSTIN AT AUSTIN, TX--Continued

301926097502201 - LAKE AUSTIN SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
JAN												
15...	1150	1.00	471	8.60	12.5	2.40	5	1.5	10.6	101	0.1	K1
15...	1155	10.0	479	8.60	12.5	--	--	--	10.6	101	--	--
15...	1200	20.0	473	8.60	12.5	--	--	--	10.4	99	--	--
15...	1205	27.0	473	8.50	12.5	--	5	2.1	10.1	96	0.3	--
MAY												
16...	0820	1.00	467	8.10	21.0	1.70	5	3.2	8.1	93	1.3	120
16...	0822	10.0	467	7.90	16.5	--	--	--	7.4	77	--	--
16...	0824	20.0	467	7.90	16.5	--	--	--	7.2	75	--	--
16...	0826	27.0	467	7.70	16.5	--	5	4.5	7.2	75	0.4	--
AUG												
18...	1057	1.00	476	7.80	25.5	1.80	5	1.8	6.1	76	0.5	K4
18...	1059	10.0	472	7.60	22.5	--	--	--	5.1	60	--	--
18...	1101	20.0	472	7.50	22.0	--	--	--	4.7	55	--	--
18...	1103	27.0	472	7.50	22.0	--	5	17	4.7	55	0.3	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
JAN												
15...	K7	190	48	44	20	26	0.8	3.1	144	27	49	0.2
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	190	48	44	20	26	0.8	3.1	144	27	51	0.2
MAY												
16...	100	180	34	43	18	23	0.8	3.6	148	29	37	0.2
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	180	33	41	18	22	0.7	3.4	144	30	44	0.2
AUG												
18...	K31	190	34	44	19	23	0.8	3.4	154	25	40	0.4
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	180	30	44	18	23	0.8	3.4	154	24	39	0.42

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
JAN												
15...	6.0	260	4	3	<0.01	0.10	0.03	0.27	0.3	0.01	2.6	1
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	<0.01	0.10	0.02	0.38	0.4	0.01	--	--
15...	6.1	260	9	8	<0.01	0.10	0.03	0.37	0.4	0.01	1.9	1
MAY												
16...	7.1	250	2	1	<0.01	0.20	0.02	0.38	0.4	0.03	2.6	1
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	<0.01	0.30	0.03	0.47	0.5	0.03	--	--
16...	6.9	250	10	8	<0.01	0.30	0.04	0.26	0.3	0.01	4.1	<1
AUG												
18...	7.0	250	30	4	<0.01	<0.10	0.04	0.26	0.3	0.02	3.5	--
18...	--	--	--	--	<0.01	<0.10	0.04	0.26	0.3	0.01	--	--
18...	--	--	--	--	<0.01	<0.10	0.04	0.26	0.3	0.01	--	--
18...	7.4	250	29	11	--	--	--	--	--	--	3.4	--

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN											
15...	65	4	<10	<1	<3	<1	5	<0.1	<1	<1	5
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	40	--	<10	--	--	--	--
15...	65	<1	<10	3	<3	1	5	<0.1	<1	<1	6
MAY											
16...	63	<1	<10	1	<3	<1	<1	<0.1	<1	<1	4
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	30	--	<10	--	--	--	--
16...	61	<1	<10	1	11	<1	6	<0.1	<1	<1	4
AUG											
18...	--	--	--	--	<7	--	<4	--	--	--	--
18...	--	--	--	--	40	--	<10	--	--	--	--
18...	--	--	--	--	30	--	10	--	--	--	--
18...	--	--	--	--	<7	--	8	--	--	--	--

LAKE AUSTIN AT AUSTIN, TX--Continued

301926097502201 - LAKE AUSTIN SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	METHOMYL TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)
JAN											
15...	<0.1	<0.1	<0.1	<2.0	<0.1	<0.1	<0.1	<2.0	<2.0	<0.1	<0.1
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	<0.1	<0.1	<0.1	<2.0	<0.1	<0.1	<0.1	<2.0	<2.0	<0.1	<0.1
MAY											
16...	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.1	<0.1
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.1	<0.1
AUG											
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

302021097540001 - LAKE AUSTIN SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN								
15...	1310	1.00	464	8.50	13.5	2.40	10.3	100
15...	1315	10.0	466	8.50	13.5	--	10.3	100
15...	1320	18.0	468	8.50	13.5	--	10.2	99
MAY								
16...	0848	1.00	470	7.90	15.5	1.10	7.6	78
16...	0850	10.0	470	7.80	14.0	--	7.2	71
16...	0852	16.0	470	7.80	14.0	--	7.2	71
AUG								
18...	1135	1.00	472	7.60	22.0	3.00	4.5	52
18...	1137	10.0	472	7.60	21.5	--	4.5	52
18...	1139	15.0	472	7.60	21.5	--	4.5	52

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN								
15...	<0.01	0.10	0.02	0.28	0.3	0.01	30	<10
15...	--	--	--	--	--	--	--	--
15...	<0.01	0.10	0.03	0.27	0.3	0.01	50	20
MAY								
16...	<0.01	0.30	0.02	0.38	0.4	0.03	<10	10
16...	--	--	--	--	--	--	--	--
16...	<0.01	0.30	0.03	0.37	0.4	0.03	10	10
AUG								
18...	<0.01	<0.10	0.02	0.38	0.4	0.02	20	<10
18...	--	--	--	--	--	--	--	--
18...	<0.01	<0.10	0.02	0.58	0.6	0.04	20	10

302314097544901 - LAKE AUSTIN SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
JAN												
15...	1415	1.00	460	8.30	14.5	--	5	1.3	10.3	102	0.2	K7
15...	1420	7.00	478	8.30	14.5	--	--	--	10.3	102	2.6	--
MAY												
16...	0910	1.00	481	7.80	14.0	2.20	5	2.0	7.0	69	0.5	110
16...	0912	8.00	481	7.70	14.0	--	--	--	7.0	69	--	--
AUG												
18...	1205	1.00	469	7.50	20.5	3.10	5	1.0	2.9	33	0.3	K4
18...	1207	10.0	469	7.50	20.5	--	--	--	2.9	33	--	--

LAKE AUSTIN AT AUSTIN, TX--Continued

302314097544901 - LAKE AUSTIN SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
JAN												
15...	K1	190	49	44	20	26	0.8	3.3	143	43	48	0.2
15...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
16...	140	190	34	44	19	24	0.8	3.6	154	30	39	0.2
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
18...	K13	180	31	43	18	22	0.7	3.4	151	25	40	0.46
18...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN												
15...	6.0	280	5	3	<0.01	0.20	0.03	0.27	0.3	0.01	9.6	1
15...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
16...	7.2	260	2	2	<0.01	0.30	0.02	0.28	0.3	<0.01	2.8	<1
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
18...	6.8	250	1	1	<0.01	<0.10	0.03	0.97	1.0	0.02	3.1	--
18...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN											
15...	66	<1	<10	<1	4	6	4	<0.1	<1	<1	5
15...	--	--	--	--	--	--	--	--	--	--	--
MAY											
16...	65	<1	<10	1	<3	<1	3	<0.1	<1	<1	4
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
18...	--	--	--	--	<7	--	43	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

DATE	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
JAN											
15...	<0.1	<0.1	<0.1	<2.0	<0.1	<0.1	<0.1	<2.0	<2.0	<0.1	<0.1
15...	--	--	--	--	--	--	--	--	--	--	--
MAY											
16...	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.1	<0.1
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

08155260 BARTON CREEK NEAR CAMP CRAFT ROAD, AUSTIN, TX

LOCATION.--Lat 30 16'12", long 97 49'43", Travis County, Hydrologic Unit 12090205, on left bank about 0.5 mi south of Camp Craft Road, 1.0 mi downstream from bridge on Lost Creek Blvd., and 5 mi west of the State Capitol Building in Austin.

DRAINAGE AREA.--109 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1982 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 570 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair above 10 ft^3/s and poor below. Daily discharges are not published above 250 ft^3/s. Station is equipped with an automatic water-quality sampler. Discharge records for samples collected by the automatic sampler are poor. There are three recording rain gages in the watershed upstream from the gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 12.94 ft June 6, 1985 (discharge not determined); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum gage height 11.56 ft, May 10 (discharge not determined); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	10	187	49	24	28	10	---	101	21	.01	.00
2	.00	13	156	49	24	27	9.8	35	91	19	.00	.00
3	.00	13	143	47	---	27	9.6	20	85	16	.00	.00
4	.00	13	133	45	---	27	9.9	15	83	14	.00	.00
5	.00	13	119	43	96	25	9.9	12	83	13	.00	.00
6	.00	12	112	42	85	25	9.7	11	68	11	.01	4.1
7	.00	11	108	41	77	23	9.8	9.5	---	9.9	.01	23
8	.00	11	103	41	70	23	9.7	8.8	---	9.4	.00	12
9	.00	10	99	42	69	22	9.9	---	105	8.7	.00	5.7
10	.00	9.9	---	41	73	21	9.5	---	101	7.7	.00	1.9
11	.00	12	---	40	66	21	9.4	140	91	6.4	.00	.96
12	.00	13	---	38	61	21	9.8	89	87	4.5	.00	.97
13	.00	13	---	37	52	21	8.9	74	---	2.5	.00	.78
14	.01	12	194	36	56	20	8.4	58	89	1.0	.00	.67
15	6.6	13	180	35	49	19	7.4	---	77	.61	.00	.60
16	2.2	14	162	34	46	19	6.8	---	60	.45	.00	.56
17	.35	13	145	33	45	17	6.1	---	88	.34	.00	.55
18	.25	17	131	33	43	18	6.7	---	84	.26	.00	.51
19	35	25	116	32	42	17	7.3	---	90	.20	.00	.49
20	64	78	108	30	40	16	6.7	212	65	.14	.00	.51
21	30	45	102	30	38	16	6.3	180	47	.11	.00	.50
22	19	35	99	29	37	14	5.7	152	43	.09	.00	.49
23	14	33	95	27	36	14	4.4	131	41	.07	.00	.47
24	12	---	91	27	35	14	3.1	114	39	.05	.00	.43
25	11	142	86	27	35	14	1.8	103	38	.05	.00	.40
26	11	106	84	26	34	13	.90	106	36	.04	.00	.33
27	9.9	---	84	25	31	13	.71	101	33	.03	.00	.25
28	9.6	---	80	25	29	13	.69	93	29	.02	.00	.24
29	9.6	---	72	24	---	13	.57	88	27	.02	.00	.24
30	9.8	220	64	24	---	10	.52	84	23	.01	.00	.42
31	9.6	---	58	24	---	10	---	94	---	.01	.00	---
TOTAL	253.93	---	---	1076	---	581	199.99	---	---	146.60	.03	57.07
MEAN	8.19	---	---	34.7	---	18.7	6.67	---	---	4.73	.00	1.90
MAX	64	---	---	49	---	28	10	---	---	21	.01	23
MIN	.00	---	---	24	---	10	.52	---	---	.01	.00	.00
CFSM	.08	---	---	.32	---	.17	.06	---	---	.04	.00	.02
IN.	.09	---	---	.37	---	.20	.07	---	---	.05	.00	.02
AC-FT	504	---	---	2130	---	1150	397	---	---	291	.06	113

CAL YR 1985 TOTAL - MEAN - MAX - MIN - CFSM - IN. - AC-FT
WTR YR 1986 TOTAL - MEAN - MAX - MIN - CFSM - IN. - AC-FT

08155260 BARTON CREEK NEAR CAMP CRAFT ROAD, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1983 to September 1986.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN												
27...	0935	30	445	7.90	10.0	5	1.5	9.5	86	0.1	K14	K19
FEB												
03...	2400	440	397	--	--	--	--	--	--	2.3	6600	5100
04...	0030	664	396	--	--	15	160	--	--	--	--	--
04...	0100	692	409	8.00	--	--	--	--	--	--	--	--
04...	0130	673	412	--	--	--	--	--	--	1.9	20000	6600
04...	0200	641	423	--	--	10	150	--	--	--	--	--
04...	0230	601	420	--	--	15	80	--	--	--	--	--
APR												
08...	1050	11	428	8.00	24.0	5	1.1	9.8	119	0.5	K2	60
MAY												
01...	1345	490	--	--	--	--	--	--	--	2.4	12000	29000
01...	1415	510	--	--	--	--	--	--	--	2.3	11000	26000
01...	1445	470	--	--	--	20	330	--	--	--	--	--
01...	1515	410	333	8.30	--	--	--	--	--	--	--	--
01...	1545	280	--	--	--	--	--	--	--	1.9	K4900	K6000
09...	2145	420	408	--	--	--	--	--	--	1.3	K1000	9600
09...	2215	990	302	--	--	--	--	--	--	--	--	--
09...	2245	1060	304	--	--	100	250	--	--	3.2	16000	38000
09...	2315	880	270	--	--	--	--	--	--	--	--	--
09...	2345	750	256	7.80	--	--	--	--	--	--	--	--
10...	0015	710	261	--	--	50	750	--	--	3.5	17000	59000
JUN												
16...	0830	67	443	8.00	27.5	5	2.8	6.8	--	0.5	84	120

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
JAN												
27...	240	40	65	19	9.2	0.3	0.9	201	20	15	0.2	7.4
FEB												
03...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	210	40	58	15	8.9	0.3	1.4	167	21	22	0.2	7.5
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
08...	200	23	53	17	9.1	0.3	1.1	179	19	15	0.2	8.9
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	150	27	43	11	7.4	0.3	2.0	126	25	13	0.2	8.7
01...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	120	23	36	6.9	4.9	0.2	2.8	95	23	7.5	0.1	5.9
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
16...	210	12	57	16	6.8	0.2	1.2	196	17	10	0.2	8.8

08155260 BARTON CREEK NEAR CAMP CRAFT ROAD, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
JAN												
27...	260	2	2	--	<0.01	0.10	0.02	0.18	0.2	0.01	1.0	<1
FEB												
03...	--	--	--	0.57	0.03	0.60	0.07	0.93	1.0	0.04	4.2	--
04...	--	252	60	0.58	0.02	0.60	0.01	0.79	0.8	0.04	4.6	--
04...	230	--	--	0.48	0.02	0.50	0.02	0.88	0.9	0.02	5.7	--
04...	--	--	--	0.28	0.02	0.30	0.02	0.48	0.5	0.01	5.4	--
04...	--	238	46	0.19	0.01	0.20	<0.01	--	0.8	0.02	4.0	--
04...	--	138	18	0.17	0.03	0.20	0.01	0.59	0.6	0.02	3.7	--
APR												
08...	230	6	1	--	<0.01	<0.10	<0.01	--	<0.2	<0.01	3.9	--
MAY												
01...	--	--	--	0.37	0.03	0.40	0.15	0.65	0.8	0.14	20	--
01...	--	--	--	0.45	0.05	0.50	0.21	0.79	1.0	0.07	8.5	--
01...	--	482	62	0.64	0.06	0.70	0.13	1.1	1.2	0.17	9.8	--
01...	190	--	--	0.45	0.05	0.50	0.09	1.2	1.3	--	7.4	--
01...	--	--	--	0.46	0.04	0.50	0.09	0.51	0.6	0.05	5.0	--
09...	--	--	--	0.19	0.01	0.20	0.08	0.52	0.6	0.04	6.1	--
09...	--	--	--	0.28	0.02	0.30	0.12	0.88	1.0	0.11	8.0	2
09...	--	404	72	0.38	0.02	0.40	0.12	1.5	1.6	0.27	16	--
09...	--	--	--	0.47	0.03	0.50	0.11	2.1	2.2	0.18	34	2
09...	140	--	--	0.47	0.03	0.50	0.09	4.2	4.3	0.68	41	--
10...	--	604	140	0.48	0.02	0.50	0.09	2.3	2.4	0.38	30	--
JUN												
16...	230	28	17	--	<0.01	0.10	0.03	0.27	0.3	0.01	2.0	--

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN											
27...	25	<1	<10	<1	<3	1	3	<0.1	<1	<1	6
FEB											
03...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	22	6	<10	5	20	<1	<1	<0.1	<1	<1	7
09...	--	--	--	--	--	--	--	--	--	--	--
09...	23	<1	<10	5	26	1	<1	<0.1	<1	<1	<3
09...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
JUN											
16...	--	--	--	--	--	--	--	--	--	--	--

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX

LOCATION.--Lat 30 14'40", long 97 48'07", Travis County, Hydrologic Unit 12090205, on Loop 360, 0.9 mi west of the intersection of Ben White and Lamar Boulevards, and 4.3 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--116 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1975 to January 1977 (periodic gage heights and discharge measurements only), February 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 510.32 ft above National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bench mark).

REMARKS.-- Estimated daily discharges: Mar. 28 to Apr. 29. Records fair except those below 5 ft³/s, which are poor. No known regulation or diversions. There are three recording rain gages located in the watershed above station.

AVERAGE DISCHARGE.--9 years, 36.7 ft³/s (4.30 in/yr), 26,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,100 ft³/s May 25, 1981 (gage height, 15.03 ft); no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of May 28, 1929, was probably the highest since that date (discharge 39,400 ft³/s), based on a slope-area measurement of peak flow at a site about 2 mi upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 27	1215	1,900	6.57	May 9	2345	2,360	6.87
Dec. 11	0030	1,800	6.50	May 10	0700	*7,620	*9.77
Dec. 11	1745	1,580	6.34	May 18	0115	4,260	8.02

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	162	45	2.0	16	.00	120	108	1.3	.00	.00
2	.00	.00	134	45	1.9	17	.00	68	91	.60	.00	.00
3	.00	.00	123	42	37	16	.00	20	79	.36	.00	.00
4	.00	.00	114	38	264	15	.00	3.3	74	.26	.00	.00
5	.00	.00	102	34	78	13	.00	.55	73	.21	.00	.00
6	.00	.00	94	32	59	13	.00	.42	63	.02	.00	4.8
7	.00	.00	86	31	51	12	.00	.42	70	.00	.00	.01
8	.00	.00	79	32	47	12	.00	.42	176	.00	.00	.00
9	.00	.00	72	34	47	12	.00	91	106	.00	.00	.00
10	.00	.00	128	32	48	11	.00	1720	98	.00	.00	.00
11	.00	.00	852	27	46	10	.00	156	85	.00	.00	.00
12	.00	.00	320	24	44	11	.00	99	74	.00	.00	.00
13	.00	.00	220	22	43	12	.00	79	130	.00	.00	.00
14	7.4	.00	183	20	43	11	.00	66	80	.00	.00	.00
15	7.0	.00	165	18	41	9.5	.00	301	63	.00	.00	.00
16	.00	.00	150	17	38	8.4	.00	201	53	.00	.00	.00
17	.00	.00	136	15	36	7.9	.00	370	74	.00	.00	.00
18	.00	.00	126	13	33	7.5	.00	1020	64	.00	.00	.00
19	53	.86	115	12	31	7.7	.00	276	75	.00	.00	.00
20	47	59	108	10	29	5.6	.00	213	53	.00	.00	.00
21	8.1	34	101	9.0	27	4.5	.00	179	42	.00	.00	.00
22	.07	11	95	6.5	25	3.2	.00	154	35	.00	.00	.00
23	.00	3.7	89	5.6	24	3.3	.00	136	31	.00	.00	.00
24	.00	103	82	4.9	24	2.6	.00	123	27	.00	.00	.00
25	.00	151	74	4.2	23	1.8	.00	111	23	.00	.00	.00
26	.00	103	70	3.8	22	.76	.00	113	20	.00	.00	.00
27	.00	959	67	3.7	20	.64	.00	109	15	.00	.00	.00
28	.00	449	63	3.5	18	.30	.00	97	9.8	.00	.00	.00
29	.00	248	57	3.2	---	.12	.00	86	5.7	.00	.00	.00
30	.00	197	55	2.9	---	.02	2.8	79	2.9	.00	.00	.00
31	.00	---	49	2.4	---	.00	---	92	---	.00	.00	---
TOTAL	122.57	2318.56	4271	592.7	1201.9	244.84	2.80	6084.11	1900.4	2.75	.00	4.81
MEAN	3.95	77.3	138	19.1	42.9	7.90	.09	196	63.3	.09	.00	.16
MAX	53	959	852	45	264	17	2.8	1720	176	1.3	.00	4.8
MIN	.00	.00	49	2.4	1.9	.00	.00	.42	2.9	.00	.00	.00
CFSM	.03	.67	1.19	.16	.37	.07	.00	1.69	.55	.00	.00	.00
IN.	.04	.74	1.37	.19	.39	.08	.00	1.95	.61	.00	.00	.00
AC-FT	243	4600	8470	1180	2380	486	5.6	12070	3770	5.5	.00	9.5

CAL YR 1985 TOTAL 28146.77 MEAN 77.1 MAX 2990 MIN .00 CFSM .66 IN. 9.03 AC-FT 55830
WTR YR 1986 TOTAL 16746.44 MEAN 45.9 MAX 1720 MIN .00 CFSM .40 IN. 5.37 AC-FT 33220

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1979 to current year. Pesticide analyses: January 1979 to September 1986. Radiochemical analyses: April 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN												
27...	0900	14	430	9.00	9.5	5	0.7	10.6	--	0	K9	K15
FEB												
04...	0115	393	391	--	--	--	--	--	--	2.8	--	--
04...	0145	757	363	--	--	20	74	--	--	--	8800	18000
04...	0215	786	390	--	--	--	--	--	--	2.9	11000	11000
04...	0245	728	404	8.00	--	--	--	--	--	--	--	--
04...	0315	683	412	--	--	7	210	--	--	--	--	--
04...	0345	602	421	--	--	--	--	--	--	2.1	22000	K4000
MAR												
27...	1000	0.68	403	8.10	19.5	5	1.0	8.9	97	1.0	K9	K10
MAY												
01...	1515	460	--	--	--	--	--	--	--	5.5	20000	23000
01...	1545	460	--	8.20	--	--	--	--	--	--	--	--
01...	1615	398	--	--	--	30	300	--	--	--	25000	29000
01...	1645	344	--	--	--	--	--	--	--	3.3	--	--
01...	1715	296	--	--	--	30	250	--	--	--	--	--
01...	1745	260	--	--	--	--	--	--	--	2.5	9600	22000
09...	2230	434	185	--	--	--	--	--	--	4.5	K95000	49000
09...	2300	2020	206	--	--	--	--	--	--	--	--	--
09...	2330	2340	297	--	--	45	230	--	--	4.1	22000	51000
09...	2400	1860	271	--	--	--	--	--	--	--	--	--
10...	0030	1390	266	--	--	50	500	--	--	--	--	--
10...	0100	1180	248	--	--	--	--	--	--	4.6	31000	58000
10...	0845	2800	171	8.00	--	200	450	--	--	5.0	K26000	57000
JUN												
16...	0905	54	413	8.20	28.0	5	2.5	8.1	--	0.6	K64	100

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
JAN												
27...	230	19	62	19	9.5	0.3	1.0	214	23	17	0.2	7.2
FEB												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	200	40	57	15	8.9	0.3	1.5	164	21	24	0.2	7.8
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
27...	200	42	51	18	9.5	0.3	1.1	159	30	17	0.2	7.3
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	140	23	41	10	6.9	0.3	2.0	121	23	13	0.1	7.5
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	85	8	26	4.9	2.3	0.1	2.2	77	8.6	3.7	0.1	6.1
JUN												
16...	190	11	53	15	6.4	0.2	1.2	183	16	9.7	0.2	8.5

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PFNDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN												
27...	270	2	1	--	<0.01	0.10	0.01	0.29	0.3	0.01	1.8	<1
FEB												
04...	--	--	--	0.18	0.02	0.20	<0.01	--	0.4	0.03	6.1	--
04...	--	128	12	0.28	0.02	0.30	<0.01	--	0.6	0.02	4.3	--
04...	--	--	--	0.47	0.03	0.50	<0.01	--	0.9	0.03	6.0	--
04...	230	--	--	0.47	0.03	0.50	<0.01	--	0.7	0.03	6.8	--
04...	--	382	48	0.28	0.02	0.30	<0.01	--	0.9	0.05	6.7	--
04...	--	--	--	0.18	0.02	0.20	<0.01	--	0.6	0.02	5.7	--
MAR												
27...	230	3	1	--	<0.01	<0.10	0.02	0.28	0.3	0.01	1.7	--
MAY												
01...	--	--	--	0.36	0.04	0.40	0.06	1.0	1.1	0.14	11	--
01...	180	--	--	0.37	0.03	0.40	0.05	1.2	1.3	0.17	7.3	--
01...	--	664	58	0.31	0.09	0.40	0.23	0.87	1.1	0.14	12	--
01...	--	--	--	0.44	0.06	0.50	0.21	0.79	1.0	0.16	9.3	--
01...	--	452	66	0.45	0.05	0.50	0.06	0.74	0.8	0.08	12	--
01...	--	--	--	0.55	0.05	0.60	0.06	1.1	1.2	0.10	15	--
09...	--	--	--	0.86	0.04	0.90	0.01	2.3	2.3	0.49	18	--
09...	--	--	--	0.46	0.04	0.50	0.09	1.9	2.0	0.40	36	1
09...	--	620	70	0.38	0.02	0.40	0.08	1.6	1.7	0.28	19	--
09...	--	--	--	0.36	0.04	0.40	0.10	1.3	1.4	0.22	21	2
10...	--	928	104	0.47	0.03	0.50	0.10	2.5	2.6	0.19	26	--
10...	--	--	--	0.57	0.03	0.60	0.08	2.8	2.9	0.41	33	--
10...	100	1240	152	0.18	0.02	0.20	0.04	1.6	1.6	0.09	33	<1
JUN												
16...	220	8	6	--	<0.01	0.10	0.02	0.18	0.2	0.01	2.1	--

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN											
27...	25	<1	10	<1	<3	<1	2	<0.1	<1	<1	3
FEB											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
MAR											
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	25	<1	<10	5	10	1	<1	<0.1	<1	<1	5
09...	--	--	--	--	--	--	--	--	--	--	--
09...	21	<1	<10	3	20	1	<1	<0.1	<1	<1	7
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	13	<1	<10	2	51	3	1	<0.1	<1	<1	<3
JUN											
16...	--	--	--	--	--	--	--	--	--	--	--

08155500 BARTON SPRINGS AT AUSTIN, TX

LOCATION.--Lat 30 15'48", long 97 46'16", Travis County, Hydrologic Unit 12090205, at ground-water well (YD 58-42-903), on right bank 0.4 mi upstream from Barton Springs Road bridge over Barton Creek, 0.7 mi upstream from mouth, and 1.8 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--Not applicable. Only springflow is published for this station.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1894 to April 1917, and October 1918 to February 1978 (discharge measurements only), May 1917 to September 1918 (published as "Barton Creek at Austin, Texas"), and March 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage, at ground-water well (YD 58-42-903), is 462.34 ft above National Geodetic Vertical Datum of 1929. May 1917 to September 1918, nonrecording gage at site 1,000 ft downstream at different datum.

REMARKS.--Estimated daily discharges: July 14 to Aug. 18. Records poor. Only springflow from the Edwards and associated limestones in the Balcones Fault Zone are published for this station. This station is part of an urban hydrologic project to study the ground-water resources in the Austin urban area.

AVERAGE DISCHARGE.--9 years (water years 1918, 1979-86), 54.7 ft^3/s (39,630 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD (DISCHARGE MEASUREMENTS ONLY).--Maximum measured discharge, 166 ft^3/s May 10, 1941; minimum measured, 9.6 ft^3/s Mar. 29, 1956.

EXTREMES FOR PERIOD OF RECORD (1917-18 AND SINCE MARCH 1978).--Maximum daily spring discharge, 108 ft^3/s June 9-11, 16, 20, 21, 1979; minimum daily spring discharge, 12 ft^3/s Feb. 25, 1918.

EXTREMES FOR CURRENT YEAR.--Maximum daily spring discharge, 85 ft^3/s June 26; minimum daily, 42 ft^3/s Oct. 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	55	82	78	75	74	67	60	82	83	53	58
2	47	55	83	78	75	74	67	61	82	83	52	58
3	46	56	80	78	77	74	67	62	82	82	51	57
4	46	55	77	78	79	74	66	62	82	82	50	57
5	45	54	77	78	80	74	66	62	81	81	50	57
6	45	54	78	78	78	73	65	61	81	81	50	58
7	44	53	78	78	78	73	65	61	80	80	52	58
8	44	53	78	78	78	73	65	60	81	79	53	58
9	43	52	78	78	78	73	65	60	80	78	55	58
10	43	52	77	78	78	73	64	62	79	78	57	59
11	43	54	76	78	78	73	64	64	83	78	58	58
12	42	57	80	78	77	73	64	67	82	78	59	57
13	42	57	79	77	77	72	64	69	82	78	60	57
14	45	57	79	78	76	72	64	71	83	78	61	56
15	50	57	79	78	76	72	64	73	83	76	62	56
16	60	57	79	78	77	72	64	76	75	74	63	55
17	68	58	79	78	75	72	63	78	64	73	63	55
18	72	58	79	77	73	71	63	79	58	71	64	55
19	71	58	79	77	72	71	63	79	53	70	64	54
20	70	60	79	77	71	71	62	79	65	69	64	54
21	67	61	79	77	69	70	62	79	84	67	63	53
22	65	62	79	77	68	70	62	79	84	65	63	53
23	61	63	79	77	73	70	62	79	74	64	62	52
24	60	64	79	77	74	69	61	79	78	63	62	51
25	58	67	79	75	74	69	61	79	84	62	61	51
26	57	70	79	76	75	69	60	79	85	60	61	51
27	57	63	79	76	75	68	60	79	84	59	61	51
28	56	54	79	76	75	68	60	79	83	58	60	51
29	55	69	78	76	---	67	60	79	84	57	60	50
30	55	77	78	75	---	67	59	79	84	55	60	50
31	55	---	78	76	---	67	---	79	---	54	59	---
TOTAL	1659	1762	2442	2395	2111	2208	1899	2215	2362	2216	1813	1648
MEAN	53.5	58.7	78.8	77.3	75.4	71.2	63.3	71.5	78.7	71.5	58.5	54.9
MAX	72	77	83	78	80	74	67	79	85	83	64	59
MIN	42	52	76	75	68	67	59	60	53	54	50	50
AC-FT	3290	3490	4840	4750	4190	4380	3770	4390	4690	4400	3600	3270

CAL YR 1985 TOTAL 24814 MEAN 68.0 MAX 90 MIN 42 AC-FT 49220
WTR YR 1986 TOTAL 24730 MEAN 67.8 MAX 85 MIN 42 AC-FT 49050

08155500 BARTON SPRINGS AT AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1903, June 1941 to February 1959. Chemical, biochemical, and pesticide analyses: December 1978 to current year. Radiochemical analyses: January to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN 27...	0800	76	575	6.90	20.0	10	1.0	7.3	82	0	35	K3
APR 09...	0805	63	597	6.80	20.0	5	0.6	7.7	85	0.1	K9	K4
MAY 02...	1130	61	589	7.00	21.0	5	4.6	6.1	69	1.0	960	K3200
JUN 23...	1245	74	448	7.90	28.0	5	2.0	8.0	--	0.3	K44	48
AUG 25...	1055	61	567	7.50	25.5	5	0.5	5.3	66	0.2	210	820

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
JAN 27...	300	33	86	20	14	0.4	1.1	264	22	22	0.2	11
APR 09...	280	23	78	20	14	0.4	1.2	254	17	22	0.2	10
MAY 02...	280	39	82	19	13	0.3	1.3	244	25	23	0.2	11
JUN 23...	210	28	55	17	7.7	0.2	1.8	179	19	12	0.2	9.4
AUG 25...	300	52	85	22	9.1	0.2	1.4	251	25	32	0.2	12

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN 27...	330	1	1	--	<0.01	1.30	0.01	0.29	0.3	0.01	0.9	<1
APR 09...	310	2	1	--	<0.01	1.30	<0.01	--	<0.2	0.01	<0.1	--
MAY 02...	320	3	1	--	<0.01	1.50	<0.01	--	0.3	0.02	0.7	--
JUN 23...	230	1	1	--	<0.01	0.20	<0.01	--	0.2	<0.01	1.8	--
AUG 25...	340	1	1	1.29	0.01	1.30	0.05	0.45	0.5	0.03	1.5	--

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 27...	47	<1	<10	<1	<3	<1	1	<0.1	<1	<1	8
APR 09...	--	--	--	--	--	--	--	--	--	--	--
MAY 02...	--	--	--	--	--	--	--	--	--	--	--
JUN 23...	--	--	--	--	--	--	--	--	--	--	--
AUG 25...	--	--	--	--	--	--	--	--	--	--	--

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX

LOCATION.--Lat 30 16'35", long 97 45'00", Travis County, Hydrologic Unit 12090205, on left bank at downstream side of bridge at 12th Street and 0.6 mi west of the State Capitol Building in Austin.

DRAINAGE AREA.--12.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to Current year. Periodic discharge measurements, periodic QW sample collection and associated peak discharges along with annual maximum, November 1974 to Current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 455.33 ft above National Geodetic Vertical Datum of 1929 (City of Austin bench mark). Apr. 2 1975 to Nov. 14, 1984, operated as a flood-hydrograph partial-record site at same location and datum.

REMARKS.--Estimated daily discharges: May 17-23. Records good except those for estimated daily discharges, which are fair. There is no known regulation or diversion. This station is part of a hydrologic research project to study the rainfall-runoff relationship for the Austin urban area. The station is equipped with an automatic water-quality sampler. There are two recording rain gages in the watershed.

EXTREMES FOR PERIOD OF RECORD.-- Maximum discharge, 16,000 ft³/s May 24, 1981 (gage height, 23.22 ft); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	1200	*2,850	*11.73	May 9	2100	1,880	9.77
Apr. 30	2145	2,580	11.23	Sep.6	0915	1,840	9.67
May 1	0730	1,010	7.54				

Minimum discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	8.2	2.7	.73	.06	.06	.06	115	38	.27	.00	8.2
2	.00	44	1.8	1.1	.07	.06	.06	6.1	4.1	.22	.00	40
3	.00	3.6	1.8	1.0	71	.04	.07	3.5	28	.20	.00	15
4	.00	1.4	1.7	.79	10	.05	.06	2.1	5.3	.14	.03	1.7
5	.00	.94	1.5	.82	2.1	.06	.05	1.6	4.8	.14	7.9	.36
6	.00	.72	1.2	.56	1.1	.06	.04	1.5	2.7	.10	.33	225
7	.00	.50	1.1	.20	.66	.06	.04	1.4	1.0	.09	.00	7.1
8	.00	.35	1.2	2.2	.48	.06	2.7	1.3	.94	.06	.04	2.8
9	.00	.23	1.3	4.9	.85	.09	3.0	181	11	.03	.03	2.2
10	.00	.24	47	2.0	1.7	.09	.18	41	1.0	.04	.00	1.7
11	.00	8.2	34	.50	1.1	1.3	.11	16	27	.02	3.3	11
12	.00	2.7	5.7	.19	.26	4.6	.26	12	1.8	.02	1.4	3.3
13	.00	1.6	3.3	.14	.12	.94	.15	9.6	.59	.01	.12	2.7
14	49	1.2	2.7	.14	.09	1.3	.18	8.6	.41	.00	.09	2.8
15	76	3.1	2.5	.09	.09	1.2	.11	99	.35	.00	.06	2.1
16	1.6	28	2.1	.09	.09	1.1	.09	11	.26	.00	.06	1.9
17	7.3	5.4	2.1	.09	.40	.94	.08	10	61	.00	.05	1.7
18	2.8	2.8	1.7	.09	.12	5.6	.07	6.7	1.5	.00	.04	1.6
19	203	36	1.6	.09	.09	1.2	.06	5.7	6.9	.00	.04	16
20	9.4	11	1.7	.09	.07	.40	1.8	4.2	2.4	.00	.03	5.1
21	2.2	3.1	1.4	.09	.04	.31	.10	2.7	.69	.00	.00	3.7
22	3.0	2.1	1.1	.09	.04	.29	.06	1.6	.56	.00	.00	2.5
23	.84	3.7	1.2	.09	.05	.09	.05	1.2	.42	.00	.03	2.2
24	.44	97	1.1	.09	.06	.09	.04	.72	.37	.00	.45	2.1
25	.30	7.0	.97	.06	.06	.08	.04	66	.35	.00	.55	2.0
26	.20	3.3	.91	.06	.06	.06	.04	3.2	.35	.00	.10	1.9
27	.11	154	1.1	.08	.06	.10	.06	1.7	.35	.00	.10	1.7
28	.04	8.1	1.0	.07	.06	.07	.06	.83	.35	.00	.09	1.6
29	.09	4.5	.83	.07	---	.07	.04	.73	.35	.00	.09	2.4
30	.09	3.5	.76	.06	---	.06	109	.60	.34	.00	.09	1.8
31	.12	---	.65	.06	---	.07	---	21	---	.00	.07	---
TOTAL	356.67	446.48	129.72	16.63	90.88	20.50	118.66	637.58	203.18	1.34	15.09	374.16
MEAN	11.5	14.9	4.18	.54	3.25	.66	3.96	20.6	6.77	.04	.49	12.5
MAX	203	154	47	4.9	71	5.6	109	181	61	.27	7.9	225
MIN	.00	.23	.65	.06	.04	.04	.04	.60	.26	.00	.00	.36
CFSM	.93	1.21	.34	.04	.26	.05	.32	1.67	.55	.00	.04	1.02
IN.	1.08	1.35	.39	.05	.27	.06	.36	1.93	.61	.00	.05	1.13
AC-FT	707	886	257	33	180	41	235	1260	403	2.7	30	742

CAL YR 1985 TOTAL 2201.84 MEAN 6.03 MAX 203 MIN .00 CFSM .49 IN. 6.66 AC-FT 4370
WTR YR 1986 TOTAL 2410.89 MEAN 6.61 MAX 225 MIN .00 CFSM .54 IN. 7.29 AC-FT 4780

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to current year. Water temperatures: January 1975 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT												
14...	2200	148	196	--	--	--	--	--	--	15	K1700000	75000
14...	2215	289	146	--	--	120	270	--	--	--	--	--
14...	2230	165	146	--	--	--	--	--	--	9.1	680000	78000
14...	2245	121	128	7.50	--	120	200	--	--	--	--	--
14...	2300	534	130	7.50	--	100	450	--	--	--	--	--
14...	2315	758	191	--	--	--	--	--	--	12	680000	86000
MAY												
09...	2000	233	142	--	--	--	--	--	--	10	600000	300000
09...	2030	470	217	--	--	--	--	--	--	--	--	--
09...	2100	764	214	--	--	200	350	--	--	4.6	70000	210000
09...	2130	1670	--	--	--	--	--	--	--	--	94000	320000
JUN												
01...	1355	195	273	--	--	60	550	--	--	6.4	K150000	92000
01...	1451	224	199	--	--	--	--	--	--	6.2	84000	88000
01...	1530	130	172	--	--	100	1300	--	--	5.0	70000	90000
11...	1130	195	--	--	--	--	--	--	--	7.8	K170000	42000
11...	1200	153	289	7.60	--	--	--	--	--	--	--	--
11...	1230	149	--	--	--	--	--	--	--	--	260000	86000
16...	1040	0.02	636	7.60	26.0	3	1.3	7.5	94	0.5	K300	K400

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT												
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	45	8	16	1.3	3.3	0.2	3.0	37	14	5.1	<0.1	2.0
14...	44	8	16	1.0	3.0	0.2	2.8	36	14	3.9	<0.1	2.0
14...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	120	44	41	3.2	9.1	0.4	2.8	72	41	16	0.3	4.5
11...	--	--	--	--	--	--	--	--	--	--	--	--
16...	240	98	87	6.5	26	0.8	3.4	146	91	44	0.3	6.3

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
OCT												
14...	--	--	--	0.36	0.04	0.40	0.11	2.9	3.0	0.72	21	--
14...	--	620	128	0.35	0.05	0.40	0.18	3.2	3.4	0.97	37	--
14...	--	--	--	0.35	0.05	0.40	0.15	2.8	2.9	0.76	37	--
14...	67	308	52	--	--	--	--	--	--	--	--	--
14...	64	1260	172	--	--	--	--	--	--	--	--	--
14...	--	--	--	0.15	0.15	0.30	0.63	3.0	3.6	1.80	28	--
MAY												
09...	--	--	--	0.54	0.06	0.60	0.36	2.0	2.4	0.32	34	--
09...	--	--	--	0.75	0.05	0.80	0.10	1.2	1.3	0.34	25	4
09...	--	796	94	0.75	0.05	0.80	0.10	1.3	1.4	0.52	20	--
09...	--	--	--	0.75	0.05	0.80	0.09	1.6	1.7	0.62	--	--
JUN												
01...	--	1700	232	0.67	0.03	0.70	0.02	2.2	2.2	0.75	23	--
01...	--	--	--	0.37	0.03	0.40	0.04	3.5	3.5	0.33	78	--
01...	--	2480	684	0.38	0.02	0.40	0.01	1.3	1.3	0.17	51	--
11...	--	--	--	0.56	0.04	0.60	0.06	1.2	1.3	2.80	55	--
11...	160	--	--	0.56	0.04	0.60	0.02	1.8	1.8	2.80	58	--
11...	--	--	--	0.56	0.04	0.60	0.03	6.2	6.2	0.15	59	--
16...	350	4	4	--	<0.01	<0.10	0.05	0.15	0.2	0.02	2.3	--

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	--	--	--	--	--	--	--	--	--	--	--
09...	24	<1	<10	4	35	<1	<1	<0.1	<1	<1	3
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
JUN											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--

08157900 TOWN LAKE AT AUSTIN, TX

LOCATION.--Lat 30°14'56", long 97°43'03", Travis County, Hydrologic Unit 12090205, at Longhorn Dam on the Colorado River at Austin, 1.5 mi downstream from Interstate Highway 35, and 2.3 mi southeast of the State Capitol in Austin.

DRAINAGE AREA.--39,003 mi², approximately, of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1975 to current year.

301559097424801 - TOWN LAKE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1020	1.00	525	8.00	14.0	8.5	83
13...	1022	10.0	524	8.00	13.5	8.3	80
13...	1024	21.0	531	7.90	13.0	8.2	78
MAY							
16...	1225	1.00	413	7.70	20.0	6.4	72
16...	1227	10.0	428	7.60	19.5	6.2	69
16...	1229	22.0	413	7.60	19.0	5.9	65
AUG							
19...	0945	1.00	480	7.70	27.5	6.4	--
19...	0947	10.0	480	7.70	26.5	6.1	77
19...	0949	22.0	480	7.40	25.0	3.6	44

301500097424801 - TOWN LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
FEB												
13...	0950	1.00	525	8.00	14.0	1.80	7	2.0	8.0	78	0.3	26
13...	0952	10.0	524	8.00	13.5	--	--	--	8.2	79	--	--
13...	0954	21.0	531	7.90	13.0	--	10	14	8.1	77	0.2	--
MAY												
16...	1150	1.00	414	7.70	20.5	0.4	--	22	6.6	75	1.9	K4200
16...	1152	5.00	410	7.70	20.5	--	--	--	6.5	74	--	--
16...	1154	10.0	400	7.60	19.0	--	--	--	6.1	67	--	--
16...	1156	15.0	410	7.60	19.0	--	--	--	6.2	68	--	--
16...	1158	20.0	415	7.60	19.0	--	--	--	6.3	70	--	--
16...	1200	26.0	413	7.60	19.0	--	--	40	6.1	67	1.0	--
AUG												
19...	0920	1.00	480	7.60	28.0	1.70	10	2.0	5.6	--	0.2	100
19...	0922	10.0	480	7.60	26.0	--	--	--	5.7	71	--	--
19...	0924	20.0	480	7.50	25.0	--	--	--	4.8	59	--	--
19...	0925	24.0	483	7.40	25.0	--	5	13	3.6	44	0.2	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
FEB												
13...	30	240	38	63	19	19	0.6	2.3	198	20	32	0.2
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	240	49	64	19	18	0.5	2.3	189	20	31	0.2
MAY												
16...	K5500	160	27	40	15	16	0.6	3.2	135	27	34	0.2
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	160	24	39	14	18	0.6	3.2	131	26	33	0.2
AUG												
19...	20	190	30	46	18	23	0.8	[illegible]	159	26	40	0.4
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	190	30	46	18	23	0.8	3.2	159	26	41	0.4

TOWN LAKE AT AUSTIN, TX--Continued

301500097424801 - TOWN LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB												
13...	7.9	280	7	4	0.49	0.01	0.50	0.11	0.39	0.5	0.02	6.2
13...	--	--	--	--	0.49	0.01	0.50	0.11	0.29	0.4	0.02	--
13...	8.0	280	15	2	0.59	0.01	0.60	0.13	0.37	0.5	0.04	7.5
MAY												
16...	6.9	230	19	--	0.39	0.01	0.40	--	--	0.4	0.04	3.7
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	<0.01	0.30	0.06	0.54	0.6	0.07	--
16...	6.8	220	39	--	0.29	0.01	0.30	--	--	0.5	0.04	18
AUG												
19...	7.9	260	2	2	--	<0.01	0.20	0.04	0.26	0.3	0.03	3.0
19...	--	--	--	--	--	<0.01	0.10	0.02	0.38	0.4	0.02	--
19...	--	--	--	--	--	<0.01	0.10	0.06	0.34	0.4	0.01	--
19...	8.2	260	11	3	--	<0.01	0.20	0.07	0.23	0.3	0.02	5.3

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB												
13...	<1	57	<1	<10	3	<3	<1	11	<0.1	<1	<1	10
13...	--	--	--	--	--	20	--	10	--	--	--	--
13...	<1	57	<1	<10	2	4	<1	16	<0.1	<1	<1	11
MAY												
16...	<1	52	<1	<10	2	20	1	2	<0.1	<1	<1	4
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	20	--	<10	--	--	--	--
16...	<1	51	<1	<10	1	25	2	5	<0.1	<1	6	<3
AUG												
19...	--	--	--	--	--	<7	--	<4	--	--	--	--
19...	--	--	--	--	--	10	--	<10	--	--	--	--
19...	--	--	--	--	--	10	--	<10	--	--	--	--
19...	--	--	--	--	--	<7	--	<4	--	--	--	--

DATE	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNF TOTAL (UG/L)
FEB											
13...	<0.1	<0.1	<0.1	<2.0	<0.1	<0.1	<0.1	<2.0	<2.0	<0.1	<0.1
13...	--	--	--	--	--	--	--	--	--	--	--
13...	<0.1	<0.1	<0.1	<2.0	<0.1	<0.1	<0.1	<2.0	<2.0	<0.1	<0.1
MAY											
16...	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.1	<0.1
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.1	<0.1
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

301503097424701 - TOWN LAKE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB							
13...	0930	1.00	525	8.00	15.0	9.0	90
13...	0932	10.0	524	8.00	14.5	8.9	88
13...	0934	18.0	531	8.00	12.5	9.1	86
MAY							
16...	1240	1.00	413	7.70	20.0	6.7	76
16...	1242	10.0	405	7.60	19.0	6.4	71
16...	1244	17.0	390	7.60	19.0	6.1	67
AUG							
19...	0910	1.00	480	7.50	28.0	5.3	--
19...	0912	10.0	480	7.60	26.0	5.6	70
19...	0913	15.0	480	7.50	26.0	5.5	69

TOWN LAKE AT AUSTIN, TX--Continued

301500097440801 - TOWN LAKE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1045	1.00	522	8.00	13.0	8.3	79
13...	1047	12.0	542	7.80	12.0	8.5	80
MAY							
16...	1310	1.00	428	7.70	21.0	6.5	75
16...	1312	10.0	428	7.60	20.5	6.3	72
16...	1314	13.0	428	7.60	20.5	6.3	72
AUG							
19...	1015	1.00	479	7.70	27.5	6.2	--
19...	1017	13.0	474	7.70	26.0	5.9	74

301504097440901 - TOWN LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1035	1.00	522	8.00	13.5	8.8	85
13...	1037	10.0	528	7.90	13.0	8.8	84
13...	1039	22.0	542	7.80	12.0	8.8	82
MAY							
16...	1300	1.00	428	7.70	21.0	6.6	76
16...	1302	10.0	428	7.60	20.5	6.3	72
16...	1303	20.0	428	7.60	20.5	6.3	72
16...	1304	27.0	428	7.60	20.5	6.2	71
AUG							
19...	1000	1.00	480	7.70	27.0	6.1	78
19...	1002	10.0	480	7.60	26.0	5.6	70
19...	1004	20.0	480	7.50	25.5	5.3	66
19...	1006	29.0	480	7.50	25.5	4.9	61

301544097445201 - TOWN LAKE CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1105	1.00	542	7.80	12.0	8.8	82
13...	1107	9.00	542	7.80	12.0	8.8	82
MAY							
16...	1325	1.00	460	7.70	20.5	6.6	75
16...	1327	10.0	455	7.70	20.5	6.5	74
16...	1329	17.0	460	7.60	20.5	6.2	71
AUG							
20...	0845	1.00	479	7.70	27.0	5.3	68
20...	0847	8.00	479	7.60	26.5	5.1	65

301546097445101 - TOWN LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1055	1.00	542	7.80	12.0	8.8	82
13...	1057	10.0	542	7.80	12.0	8.8	82
13...	1059	15.0	542	7.80	12.0	8.8	82
MAY							
16...	1235	1.00	452	7.70	20.5	6.6	75
16...	1237	10.0	460	7.70	20.5	6.6	75
16...	1239	20.0	460	7.70	20.5	6.5	74
AUG							
20...	0835	1.00	487	7.70	26.5	5.5	70
20...	0837	10.0	487	7.70	26.5	5.2	66
20...	0838	15.0	487	7.60	26.0	5.3	66

TOWN LAKE AT AUSTIN, TX--Continued

301556097452301 - TOWN LAKE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1130	1.00	559	7.70	13.0	8.9	85
13...	1132	12.0	540	7.80	12.5	9.1	86
MAY							
16...	1350	1.00	470	7.70	20.5	6.6	75
16...	1352	11.0	470	7.70	20.0	6.4	72
AUG							
20...	0920	1.00	484	7.70	26.5	5.2	66
20...	0922	13.0	557	7.20	25.0	4.6	57

301558097452201 - TOWN LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB										
13...	1110	1.00	559	7.70	13.0	1.20	5	2.1	9.0	86
13...	1112	10.0	540	7.80	12.0	--	--	--	9.1	85
13...	1114	17.0	546	7.80	12.0	--	10	2.1	8.8	82
MAY										
16...	1400	1.00	469	7.60	20.0	0.8	--	6.5	6.9	78
16...	1402	10.0	480	7.60	20.0	--	--	--	6.8	77
16...	1404	19.0	480	7.60	20.0	--	--	25	6.8	77
AUG										
20...	0900	1.00	485	7.80	26.5	1.50	10	2.7	5.3	67
20...	0902	10.0	536	7.30	25.0	--	--	--	5.2	64
20...	0904	18.0	561	7.20	24.5	--	5	2.4	4.8	59

DATE	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
FEB										
13...	0.1	K560	230	250	47	69	20	18	0.5	2.0
13...	--	--	--	--	--	--	--	--	--	--
13...	0	--	--	250	46	64	21	20	0.6	2.5
MAY										
16...	0.7	1200	1400	200	35	50	18	20	0.6	3.0
16...	--	--	--	--	--	--	--	--	--	--
16...	0.6	--	--	190	34	47	18	22	0.7	3.1
AUG										
20...	0.4	250	200	190	30	45	18	24	0.8	3.2
20...	--	--	--	--	--	--	--	--	--	--
20...	0.5	--	--	240	30	66	19	19	0.5	2.3

DATE	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)
FEB									
13...	208	19	30	0.2	8.5	290	4	1	--
13...	--	--	--	--	--	--	--	--	0.49
13...	200	27	36	0.2	8.3	300	1	<1	--
MAY									
16...	164	28	36	0.3	7.5	260	8	--	--
16...	--	--	--	--	--	--	--	--	--
16...	157	30	41	0.2	7.2	260	30	--	--
AUG									
20...	156	26	41	0.39	7.7	260	1	1	--
20...	--	--	--	--	--	--	--	--	--
20...	213	24	32	0.42	9.8	300	1	1	--

TOWN LAKE AT AUSTIN, TX--Continued

301558097452201 - TOWN LAKE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
FEB									
13...	<0.01	0.70	0.07	0.33	0.4	0.01	2.0	4	5
13...	0.01	0.50	0.12	0.38	0.5	0.01	--	30	20
13...	<0.01	0.60	0.11	0.29	0.4	0.01	5.2	<3	18
MAY									
16...	<0.01	0.30	--	--	0.4	0.01	2.6	38	6
16...	<0.01	0.30	0.04	0.26	0.3	0.01	--	20	10
16...	<0.01	0.30	--	--	0.6	0.03	3.2	15	8
AUG									
20...	<0.01	<0.10	0.04	0.36	0.4	0.02	3.5	<7	<4
20...	<0.01	0.60	0.05	0.35	0.4	0.02	--	10	<10
20...	<0.01	0.80	0.05	0.35	0.4	0.02	2.0	<7	11

301712097470701 - TOWN LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
FEB												
13...	1145	1.00	558	7.70	13.0	1.20	5	2.0	9.2	88	0.6	K10
13...	1147	10.0	557	7.60	13.0	--	--	--	9.2	88	--	--
13...	1149	19.0	535	8.00	12.5	--	7	3.1	8.7	82	0	--
MAY												
16...	1430	1.00	473	7.90	18.5	0.9	--	6.5	7.1	78	0.6	150
16...	1432	10.0	473	7.90	18.0	--	--	--	7.0	76	--	--
AUG												
20...	0930	1.00	485	7.60	24.5	1.30	5	3.4	4.6	56	0.5	33
20...	0932	10.0	489	7.60	24.5	--	--	--	4.6	56	--	--
20...	0934	17.0	504	7.40	24.5	--	5	7.0	4.9	60	0.5	--

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
FEB												
13...	26	240	49	63	21	21	0.6	2.7	195	24	40	0.2
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	230	50	59	20	22	0.7	3.0	180	20	41	0.2
MAY												
16...	280	180	31	42	18	22	0.7	3.4	148	30	43	0.2
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
20...	28	190	32	45	18	23	0.8	3.3	154	25	41	0.39
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	190	32	45	18	23	0.8	3.2	154	25	41	0.39

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
FEB												
13...	7.4	300	3	1	<0.01	0.60	0.08	0.32	0.4	0.02	3.7	<1
13...	--	--	--	--	<0.01	0.60	0.09	0.41	0.5	0.01	--	--
13...	7.2	280	7	2	<0.01	0.50	0.12	0.38	0.5	0.01	6.1	<1
MAY												
16...	7.1	250	3	--	<0.01	0.20	--	--	0.3	<0.01	2.8	<1
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
20...	7.6	260	4	3	<0.01	0.10	0.01	0.19	0.2	0.01	5.6	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	7.4	260	8	3	<0.01	0.20	0.03	0.27	0.3	0.01	4.2	--

TOWN LAKE AT AUSTIN, TX--Continued

301712097470701 - TOWN LAKE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
FEB											
13...	66	<1	<10	<1	<3	<1	3	<0.1	<1	<1	8
13...	--	--	--	--	30	--	<10	--	--	--	--
13...	67	<1	<10	1	<3	<1	5	<0.1	<1	<1	6
MAY											
16...	61	<1	<10	1	8	3	<1	<0.1	<1	<1	7
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
20...	--	--	--	--	<7	--	<4	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	<7	--	<4	--	--	--	--

DATE	AME- TRYNE TOTAL	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB											
13...	<0.1	<0.1	<0.1	<2.0	<0.1	<0.1	<0.1	<2.0	<2.0	<0.1	<0.1
13...	--	--	--	--	--	--	--	--	--	--	--
13...	<0.1	<0.1	<0.1	<2.0	<0.1	<0.1	<0.1	<2.0	<2.0	<0.1	<0.1
MAY											
16...	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.5	<0.5	<0.1	<0.1
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--

301601097454001 - TOWN LAKE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB							
13...	1215	1.00	555	7.40	16.5	8.2	85
13...	1217	4.00	555	7.40	16.5	8.2	85
MAY							
16...	1420	1.00	470	7.50	21.0	7.0	80
16...	1422	5.00	470	7.50	21.0	7.0	80
AUG							
20...	1010	1.00	474	7.70	26.5	6.0	76
20...	1011	4.00	625	7.20	22.5	6.0	70

08158000 COLORADO RIVER AT AUSTIN, TX
(National stream-quality accounting network)

LOCATION.--Lat 30 14'40", long 97 41'39", Travis County, Hydrologic Unit 12090205, on right bank 1,000 ft upstream from upstream bridge on U.S. Highway 183 in Austin, 1.4 mi downstream from Longhorn Dam, and at mile 290.3.

DRAINAGE AREA.-39,009 mi², approximately, of which 11,403 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1898 to current year. Records of daily discharge for Dec. 13-26, 1914, and Feb. 9-17, 1915, published in WSP 408, have been found unreliable and should not be used.

REVISED RECORDS.--WSP 508: 1915(m). WSP 528: 1900(M), 1918(m). WSP 548: 1901-16. WSP 1342: Drainage area. WSP 1562: 1908, 1929(M), 1936.

GAGE.--Water-stage recorder. Datum of gage is 402.27 ft above National Geodetic Vertical Datum of 1929. Prior to June 19, 1939, all records collected at or near Congress Avenue Bridge 3.9 mi upstream at datum 19.6 ft higher; prior to June 18, 1915, nonrecording gages, recording gages thereafter; June 20, 1939, to Oct. 16, 1963, at site 1,000 ft downstream from present site at datum 5.0 ft higher.

REMARKS.--No estimated daily discharge. Records fair. Since 1937, at least 10 percent of drainage area has been regulated by upstream reservoirs. Flow largely regulated by Lake Travis (station 08154500). The city of Austin diverts water for municipal use upstream from station and returns sewage effluent downstream. There are many other diversions above Lake Buchanan for irrigation, municipal supplies, and oilfield operations. Gage-height telemeter at station.

AVERAGE DISCHARGE.--38 years (water years 1899-1936) unregulated, 2,711 ft³/s (1,964,000 acre-ft/yr); 50 years (water years 1937-86) regulated, 1,932 ft³/s (1,400,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 481,000 ft³/s June 15, 1935 (gage height, 50 ft, present site and datum, from floodmark); minimum daily, 2.4 ft³/s Feb. 28, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 51 ft July 7, 1869, present site and datum (adjusted to present site on basis of record for flood of June 15, 1935), determined from information concerning stage at former site furnished by Dean T. U. Taylor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,600 ft³/s May 9 at 2300 hours (gage height, 12.13 ft); minimum daily, 13 ft³/s Feb. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	533	65	309	1100	129	109	633	3290	1970	1980	1550	1550
2	396	90	254	1260	127	1380	878	1820	1750	1640	1730	1650
3	369	230	242	909	622	2520	862	2020	1450	1630	1090	1560
4	288	272	232	826	486	1020	1750	1870	1930	1870	1650	1470
5	270	99	142	1010	235	692	1610	1880	1690	1900	1830	1480
6	384	115	202	1110	434	95	1730	1880	1670	1920	1590	2570
7	279	290	223	1230	186	492	1600	1960	2030	1900	1600	139
8	274	194	187	1100	142	91	1510	1950	3010	1900	1570	1450
9	98	91	200	1290	166	266	1490	2920	3670	1910	1660	1480
10	96	403	432	572	168	1390	1500	4280	3580	1940	1670	1480
11	717	147	1900	649	75	1420	1540	2170	3740	1920	1670	1610
12	554	128	553	638	13	1480	1390	1960	3620	1620	1780	1480
13	510	108	468	772	115	1650	1360	1890	4570	1610	1660	1500
14	572	97	587	679	167	553	1460	1860	5930	1610	1680	1480
15	1220	122	325	876	133	794	1380	2740	5560	1490	1870	1170
16	431	112	302	521	125	270	1360	2020	4810	1480	1690	1210
17	454	126	605	172	150	337	1360	2780	5100	1460	1680	1440
18	305	125	560	77	123	125	1690	2730	5640	1480	1440	1760
19	1890	174	540	544	124	784	1620	2090	5530	1480	1740	1450
20	290	146	325	3640	323	359	1420	1860	4430	1360	1910	986
21	162	138	254	3720	309	316	1360	1970	3510	1330	1900	1240
22	116	85	211	1620	335	74	1360	1790	3530	1310	1920	1350
23	106	16	225	910	338	412	1560	1760	3550	1360	1530	1250
24	114	477	229	729	329	94	1510	1740	3520	1330	1550	1250
25	75	348	798	490	319	84	1780	1910	3520	1470	1620	1240
26	14	197	844	134	303	348	1770	1750	3520	1480	1690	1270
27	193	2480	1140	126	104	355	1770	1770	3490	1480	1700	1240
28	96	584	1070	131	100	333	1660	1730	3510	1490	1690	1270
29	107	405	1120	133	---	338	1730	2020	3250	1540	1470	1250
30	116	528	1100	132	---	342	2130	1760	1950	1550	1460	1020
31	71	---	1080	127	---	608	---	1920	---	1560	1480	---
TOTAL	11100	8392	16659	27227	6180	19131	44773	66090	105030	50000	51080	41295
MEAN	358	280	537	878	221	617	1492	2132	3501	1613	1648	1377
MAX	1890	2480	1900	3720	622	2520	2130	4280	5930	1980	1920	2570
MIN	14	16	142	77	13	74	633	1730	1450	1310	1090	139
AC-FT	22020	16650	33040	54000	12260	37950	88810	131100	208300	99180	101300	81910

CAL YR 1985 TOTAL 380432 MEAN 1042 MAX 4350 MIN 14 AC-FT 754600
WTR YR 1986 TOTAL 446957 MEAN 1225 MAX 5930 MIN 13 AC-FT 886500

08158000 COLORADO RIVER AT AUSTIN, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1932 to March 1944, October 1947 to October 1973. Chemical and biochemical analyses: October 1973 to current year. Sediment analyses: March 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1947 to current year.
WATER TEMPERATURES: October 1947 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 795 microsiemens Mar. 10, 1984; minimum daily, 243 microsiemens Dec. 2, 1953.
WATER TEMPERATURES: Maximum daily, 33.0°C July 25, 1979; minimum daily, 5.0°C Jan. 3, 1984.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 592 microsiemens Nov. 1; minimum daily, 403 microsiemens Oct. 15.
WATER TEMPERATURES: Maximum daily, 25.5°C Sept. 28; minimum daily, 10.0°C Jan. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT 09...	0955	77	568	7.50	23.0	3.0	6.8	80	0.6	K27	K330	220
MAR 24...	1346	124	510	7.80	22.5	0.9	10.8	125	0.2	44	46	220
JUL 15...	0920	17	553	7.50	25.5	--	8.2	100	0.2	K660	4500	230
AUG 27...	0935	33	527	7.00	25.5	--	7.4	91	0.2	400	540	--

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT 09...	50	53	21	30	0.9	3.5	170	34	50	0.2	7.6	307
MAR 24...	41	54	20	23	0.7	3.1	177	30	39	0.2	7.1	292
JUL 15...	44	57	20	24	0.7	5.2	181	35	42	0.2	8.6	298
AUG 27...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
OCT 09...	300	0.14	0.01	0.15	0.05	0.07	0.35	0.4	<0.01	0.01	0.01	0.03
MAR 24...	270	--	<0.01	0.31	0.04	0.04	0.36	0.4	0.01	0.01	<0.01	--
JUL 15...	300	--	<0.01	0.25	0.05	0.02	0.35	0.4	0.02	0.01	0.02	0.06
AUG 27...	--	--	<0.01	0.20	0.10	0.04	0.4	0.5	0.03	--	<0.01	--

DATE	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT 09...	1	0.21	25	<10	1	78	<0.5	<1	<1	<3	1	<3
MAR 24...	6	2.0	77	<10	1	66	<0.5	<1	<1	<3	2	<3
JUL 15...	5	0.22	59	<10	1	79	<0.6	<1	<1	<3	2	6
AUG 27...	10	0.89	88	--	--	--	--	--	--	--	--	--

08158000 COLORADO RIVER AT AUSTIN, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 09...	<1	11	15	<0.1	<10	4	<1	<1	540	<6	4
MAR 24...	3	12	4	<0.1	<10	2	<1	<1	480	<6	7
JUL 15...	<5	<4	30	0.1	<10	1	<1	<1	480	<6	<3
AUG 27...	--	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	11100	512	280	8400	45	1350	34	1010	200
NOV. 1985	8392	528	288	6540	47	1070	35	790	210
DEC. 1985	16659	531	290	13000	48	2140	35	1580	210
JAN. 1986	27227	511	280	20600	45	3300	34	2470	200
FEB. 1986	6180	546	298	4970	49	824	36	604	210
MAR. 1986	19131	503	276	14200	44	2260	33	1700	200
APR. 1986	44773	492	270	32600	42	5120	32	3880	200
MAY 1986	66090	468	257	45900	39	7040	30	5410	190
JUNE 1986	105030	486	267	75600	42	11800	32	8970	190
JULY 1986	50000	492	270	36500	42	5730	32	4340	200
AUG. 1986	51080	489	269	37000	42	5800	32	4400	200
SEPT 1986	41295	470	259	28800	40	4430	30	3400	190
TOTAL	446957	**	**	324000	**	50900	**	38500	**
WTD.AVG.	1225	490	269	**	42	**	32	**	200

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	545	592	537	533	571	535	497	456	487	493	493	490
2	541	575	518	525	575	493	481	445	486	490	489	483
3	535	530	472	523	550	490	500	476	485	495	510	472
4	538	582	434	520	510	506	499	478	486	490	492	484
5	539	586	570	489	515	501	495	480	488	494	489	487
6	540	534	524	545	530	521	485	470	487	493	479	464
7	536	544	520	466	559	525	493	469	491	503	490	435
8	530	581	570	532	565	519	512	480	461	487	507	453
9	544	550	466	496	500	495	486	477	484	487	512	458
10	560	565	519	513	562	490	492	450	487	490	492	474
11	565	549	458	533	491	485	493	437	492	487	491	478
12	533	580	457	543	500	494	495	469	497	489	490	464
13	532	564	490	535	545	514	490	473	481	490	485	469
14	530	560	555	543	520	498	488	464	483	488	492	460
15	403	559	529	524	479	496	492	468	483	490	493	466
16	524	564	545	539	554	495	488	438	483	491	497	462
17	542	552	520	541	533	515	493	476	480	490	497	470
18	537	581	571	559	559	512	492	450	489	491	489	476
19	475	584	568	540	570	515	491	440	485	492	487	469
20	496	588	567	491	550	501	485	444	481	490	484	474
21	536	590	569	475	548	508	488	452	492	535	482	470
22	502	581	528	500	554	527	490	483	489	490	497	473
23	525	574	543	539	581	520	492	485	484	491	486	470
24	516	563	515	504	579	525	493	483	490	496	479	461
25	530	515	579	558	574	507	495	486	494	491	484	466
26	539	518	566	548	524	535	491	496	487	493	479	469
27	525	499	559	555	576	525	494	473	486	495	482	466
28	556	443	553	564	578	530	490	479	484	485	485	466
29	570	495	546	577	---	526	489	487	487	495	483	471
30	560	523	549	584	---	520	490	489	495	487	479	475
31	589	---	545	553	---	519	---	489	---	492	480	---
MEAN	532	554	530	531	545	511	492	469	486	493	489	469

08158000 COLORADO RIVER AT AUSTIN, TX--Continued
(National stream-quality accounting network)

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	19.5	15.5	---	18.0	16.5	19.0	19.5	20.5	23.5	24.5	23.5
2	19.5	20.0	16.5	13.5	16.0	16.5	18.0	20.5	20.5	23.5	25.0	23.5
3	20.0	17.0	---	14.0	---	16.5	20.0	20.0	22.0	23.0	24.5	23.5
4	20.0	18.0	14.0	14.0	---	14.0	20.0	19.0	20.0	23.5	24.5	24.0
5	19.5	17.0	15.0	13.0	15.5	15.0	---	19.0	20.0	23.5	25.0	23.5
6	21.5	17.0	15.0	14.5	16.5	17.0	19.0	20.0	21.0	23.0	24.5	23.5
7	20.5	18.0	---	13.0	16.0	16.5	20.0	20.5	20.5	23.5	23.0	23.5
8	19.0	20.5	16.0	10.5	---	18.0	19.0	20.0	21.0	23.5	24.5	23.5
9	20.0	18.0	15.5	14.0	14.5	16.0	18.0	18.0	21.0	23.0	---	24.5
10	20.0	18.0	15.0	10.0	14.5	18.0	19.0	21.0	20.5	23.0	23.5	24.5
11	21.0	18.0	16.0	16.5	11.5	16.0	19.0	21.0	17.0	21.5	24.0	23.5
12	21.0	21.0	15.0	13.0	11.0	15.5	18.0	20.0	20.0	23.5	24.5	23.5
13	21.5	21.0	14.5	---	13.5	18.0	---	18.0	20.0	23.5	24.0	23.5
14	21.5	20.5	13.0	12.0	14.5	18.0	18.0	17.0	19.5	22.0	24.0	23.5
15	21.0	19.5	11.0	12.0	14.5	17.0	17.0	19.0	19.5	23.5	23.5	24.0
16	21.0	18.0	---	14.0	15.5	17.0	18.0	21.5	19.5	23.5	23.5	24.5
17	22.0	20.5	12.0	15.0	15.5	18.0	18.0	21.0	19.5	23.0	24.5	24.0
18	23.0	20.5	12.0	16.0	14.0	17.0	18.0	---	16.5	23.0	23.5	23.5
19	21.5	20.5	15.5	16.0	18.5	16.0	20.5	20.0	18.5	24.0	25.0	23.5
20	23.0	---	13.5	11.0	18.5	17.0	19.0	19.0	19.5	23.5	24.5	24.0
21	21.5	19.0	14.0	---	19.0	18.0	19.0	19.0	19.0	24.0	24.0	25.0
22	21.0	---	14.0	---	---	18.0	19.5	21.0	19.5	24.5	24.0	24.5
23	---	19.5	13.5	14.5	15.5	18.0	17.0	20.5	20.0	24.0	---	24.5
24	---	18.5	14.0	14.0	16.5	17.0	18.0	20.5	19.5	---	23.5	24.5
25	---	19.5	13.5	16.0	15.0	16.0	19.0	20.5	20.0	24.0	23.5	24.5
26	21.0	19.5	13.5	14.5	15.0	17.0	20.0	20.5	20.5	24.5	---	25.0
27	---	19.0	14.5	---	18.0	18.5	20.0	20.5	20.5	---	23.0	25.0
28	20.0	18.5	14.5	---	18.0	18.5	18.0	21.0	20.5	23.5	24.0	25.5
29	22.0	18.0	14.0	---	---	19.0	21.0	20.5	19.5	---	23.0	25.0
30	---	18.0	14.0	16.5	---	19.0	20.0	20.5	21.0	24.5	23.5	25.0
31	19.0	---	13.0	14.5	---	18.0	---	20.0	---	24.5	23.5	---
MEAN	21.0	19.0	14.0	14.0	15.5	17.0	19.0	20.0	20.0	23.5	24.0	24.0

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX

LOCATION.--Lat 30 15'47", long 97 40'20", Travis County, Hydrologic Unit 12090205, on U.S. Highway 183, 1.6 mi south of the intersection of Webberville Road and U.S. Highway 183, 4.1 mi east of the State Capitol Building in Austin, and 0.7 mi upstream from mouth.

DRAINAGE AREA.--13.1 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to July 1975 (periodic discharge measurements only), August 1975 to June 1977 (operated as a flood-hydrograph partial-record station only), June 1977 to September 1986 (converted to crest-stage gage).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 411.29 ft above National Geodetic Vertical Datum of 1929 (levels from city of Austin bench mark).

REMARKS.-- Estimated daily discharges: Oct. 4-15, Feb. 27 to Mar. 24, and Apr. 8 to May 1. Records fair except those for estimated daily discharges, which are poor. No known regulation or diversion. This station is part of a hydrologic research project to study the rainfall-runoff relationship for the Austin urban area. The station is equipped with anautomatic water-quality sampler. There are two recording rain gages in the watershed.

AVERAGE DISCHARGE.--9 years (water years 1978-86), 6.30 ft³/s (6.53 in/yr) 4,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,100 ft³/s May 23, 1975 (gage height, 17.03 ft, from floodmark), from rating curve extended above 500 ft³/s on basis of slope-area measurement of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 15	Unknown	2,900	12.58	May 15	0815	3,090	12.87
Oct. 19	1215	3,260	13.47	May 17	1545	2,630	12.09
May 1	0915	2,820	a12.43	Sept 6	0945	2,110	11.13
May 9	2200	*3,680	a*13.79				

a From floodmarks.

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	8.9	.32	.37	.37	.09	.21	201	30	.07	.00	32
2	.11	45	.24	.51	.35	.08	.26	1.3	1.7	.07	.00	.11
3	.11	5.9	.20	.40	45	.09	.27	.27	18	.07	.00	.09
4	.07	4.5	.21	.37	1.6	.11	.34	.16	4.1	.07	.33	.01
5	.05	4.0	.13	.39	.27	.12	.30	.16	.13	.07	23	.00
6	.05	4.0	.05	.32	.18	.11	.30	.13	.10	.07	.10	268
7	.05	4.2	.04	.25	.14	.10	.35	.13	.11	.07	.03	.24
8	.04	4.2	.04	1.4	.15	.09	.30	.13	.13	.09	.00	.11
9	.03	4.6	.03	1.5	.61	.08	.20	286	1.5	.07	.00	.08
10	.03	4.9	28	.48	.32	.13	.15	62	.11	.07	.00	.07
11	.03	6.2	56	.41	.18	.60	.14	6.0	25	.04	3.0	16
12	.03	10	1.1	.34	.15	2.0	.13	.92	.11	.00	.06	.21
13	.03	6.9	.65	.38	.16	.90	.12	.23	.10	.00	.00	.06
14	.03	5.8	.54	3.9	.19	.30	.11	.18	.09	.00	.00	.04
15	244	7.2	.53	.52	.18	.70	.10	238	.08	.00	.00	.02
16	1.0	21	.51	.58	.20	.20	.35	23	.07	.00	.00	.01
17	1.2	5.1	.48	1.1	.20	.50	.24	203	34	.00	.00	.01
18	1.7	4.0	.48	.94	.19	1.3	.17	8.9	.10	.00	.00	.00
19	274	24	.45	.71	.18	.60	.12	1.3	.09	.00	.00	.00
20	9.7	7.2	.47	.59	.22	.30	.55	.58	.08	.00	.00	4.8
21	9.0	3.8	.50	.61	.16	.15	.14	.34	.07	.00	.00	1.6
22	6.5	3.2	.45	.46	.16	.12	.12	.26	.08	.00	.00	4.0
23	4.1	4.1	.44	.49	.18	.10	.11	.18	.07	.00	.00	.09
24	3.1	103	.42	.51	.17	.09	.10	.16	.07	.00	3.8	.02
25	3.2	13	.37	.47	.19	.11	.09	.53	.07	.00	.03	.00
26	3.1	.80	.40	.47	.19	.10	.08	.73	.07	.00	.00	.02
27	3.8	185	.37	.40	.17	.10	.07	.34	.07	.00	.00	.04
28	4.3	1.5	.29	.44	.12	.10	.06	.19	.07	.00	.00	.00
29	5.2	.62	.31	.38	---	.12	.05	.18	.07	.00	.00	.02
30	5.1	.48	.33	.27	---	.19	.04	.16	.07	.00	.00	.00
31	5.2	---	.33	.33	---	.16	---	14	---	.00	.00	---
TOTAL	585.01	503.10	94.68	20.29	52.18	9.74	5.57	1050.46	116.31	.76	30.35	327.65
MEAN	18.9	16.8	3.05	.65	1.86	.31	.19	33.9	3.88	.02	.98	10.9
MAX	274	185	56	3.9	45	2.0	.55	286	34	.09	23	268
MIN	.03	.48	.03	.25	.12	.08	.04	.13	.07	.00	.00	.00
CFSM	1.44	1.28	.23	.05	.14	.02	.01	2.59	.30	.00	.07	.83
IN.	1.66	1.43	.27	.06	.15	.03	.02	2.98	.33	.00	.09	.93
AC-FT	1160	998	188	40	103	19	11	2080	231	1.5	60	650

CAL YR 1985 TOTAL 2539.11 MEAN 6.96 MAX 274 MIN .00 CFSM .53 IN. 7.21 AC-FT 5040
WTR YR 1986 TOTAL 2796.10 MEAN 7.66 MAX 286 MIN .00 CFSM .58 IN. 7.94 AC-FT 5550

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to September 1986. Radiochemical analyses: January 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT												
19...	1130	477	188	--	--	--	--	--	--	7.6	490000	270000
19...	1145	2140	167	7.60	--	60	2200	--	--	--	--	--
19...	1200	2970	126	--	--	80	3300	--	--	--	--	--
19...	1215	3260	132	--	--	--	--	--	--	8.0	K680000	250000
19...	1230	3190	107	7.60	--	100	1800	--	--	--	--	--
19...	1245	2670	92	--	--	140	2300	--	--	9.8	480000	280000
NOV												
24...	0945	884	149	--	--	--	--	--	--	2.9	K150000	220000
24...	1000	799	142	--	--	150	690	--	--	--	--	--
24...	1015	611	145	7.70	--	--	--	--	--	--	--	--
24...	1030	518	145	--	--	150	3000	--	--	5.9	360000	150000
24...	1045	357	141	7.70	--	--	--	--	--	--	--	--
24...	1100	273	130	--	--	--	--	--	--	3.1	200000	76000
JAN												
28...	1105	0.03	598	8.80	12.0	10	1.0	12.6	119	0.7	K72	300
MAR												
28...	1000	0.09	531	8.30	23.5	5	0.7	12.9	152	0.5	K1400	760
MAY												
09...	2045	418	173	--	--	--	--	--	--	16	600000	330000
09...	2100	1390	172	--	--	--	--	--	--	--	--	--
09...	2115	2350	147	--	--	--	--	--	--	16	450000	K210000
09...	2130	2920	178	--	--	--	--	--	--	--	--	--
09...	2145	3550	147	7.80	--	400	950	--	--	--	--	--
09...	2200	3600	128	--	--	150	900	--	--	--	100000	130000
JUN												
24...	1000	0.08	591	7.80	28.5	3	1.5	7.6	--	0.3	K3500	480
SEP												
06...	0345	418	159	--	--	--	--	--	--	5.7	680000	300000
06...	0400	712	138	--	--	--	--	--	--	--	--	--
06...	0415	698	189	--	--	--	--	--	--	7.7	500000	220000
06...	0430	624	181	--	--	--	--	--	--	--	--	--
06...	0445	539	135	--	--	--	740	--	--	--	--	--
06...	0500	474	144	--	--	--	--	--	--	5.8	390000	110000

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT												
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	66	10	23	2.2	5.0	0.3	2.7	56	19	6.3	0.1	5.0
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	47	4	17	1.2	3.2	0.2	2.4	43	9.6	3.5	0.1	5.0
19...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	65	1	23	1.8	4.9	0.3	3.3	64	13	3.6	0.2	9.7
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	67	0	24	1.8	3.4	0.2	3.4	67	11	3.5	0.2	7.3
24...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
28...	270	57	91	11	34	0.9	2.3	216	66	43	0.4	12
MAR												
28...	220	46	70	9.8	31	1	2.3	169	48	40	0.4	12
MAY												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	57	6	20	1.7	3.6	0.2	3.1	51	14	4.4	0.2	4.2
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
24...	250	51	84	9.4	27	0.8	3.4	197	52	33	0.3	13
SEP												
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT												
19...	--	--	--	0.20	0.10	0.30	0.21	1.9	2.1	2.90	100	--
19...	97	5800	464	0.07	0.13	0.20	0.24	3.0	3.2	4.00	90	--
19...	--	1200	376	0.21	0.09	0.30	0.17	2.4	2.6	3.10	55	--
19...	--	--	--	0.15	0.15	0.30	0.27	0.63	0.9	0.56	65	--
19...	68	2650	280	0.15	0.15	0.30	0.28	4.6	4.9	2.50	50	--
19...	--	2920	120	0.04	0.16	0.20	0.28	3.2	3.5	2.30	61	--
NOV												
24...	--	--	--	--	<0.01	0.20	0.02	4.7	4.7	2.20	51	--
24...	--	1850	236	--	<0.01	0.20	0.03	3.7	3.7	0.98	58	--
24...	98	--	--	--	<0.01	0.20	0.02	8.3	8.3	1.90	52	--
24...	--	3480	296	--	<0.01	0.20	0.02	7.7	7.7	2.80	56	--
24...	95	--	--	0.27	0.03	0.30	0.02	7.7	7.7	2.40	60	--
24...	--	--	--	0.29	0.01	0.30	0.02	4.7	4.7	3.20	64	--
JAN												
28...	390	1	1	--	<0.01	0.20	0.02	0.28	0.3	0.01	1.3	1
MAR												
28...	310	2	<1	--	<0.01	<0.10	0.03	0.27	0.3	0.01	18	--
MAY												
09...	--	--	--	0.36	0.04	0.40	0.11	1.5	1.6	0.34	51	--
09...	--	--	--	0.55	0.05	0.60	0.17	1.6	1.8	0.55	57	2
09...	--	--	--	0.46	0.04	0.50	0.17	2.4	2.6	0.62	53	--
09...	--	--	--	0.45	0.05	0.50	0.16	2.1	2.3	0.65	55	2
09...	82	2800	260	--	--	--	--	--	--	--	--	--
09...	--	3350	188	0.46	0.04	0.50	0.11	2.9	3.0	0.96	44	--
JUN												
24...	340	1	1	--	<0.01	<0.10	0.02	0.18	0.2	0.03	2.4	--
SEP												
06...	--	--	--	0.25	0.05	0.30	0.05	2.0	2.1	0.86	21	--
06...	--	--	--	--	--	--	--	--	--	--	--	3
06...	--	--	--	0.46	0.04	0.50	0.08	1.6	1.7	1.90	49	--
06...	--	--	--	--	--	--	--	--	--	--	--	3
06...	--	1650	--	0.26	0.04	0.30	0.05	1.5	1.5	1.30	32	--
06...	--	--	--	0.23	0.07	0.30	0.07	0.53	0.6	0.44	22	--

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
NOV											
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JAN											
28...	94	<1	<10	<1	<3	<1	7	<0.1	<1	<1	11
MAR											
28...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	--	--	--	--	--	--	--	--	--	--	--
09...	29	<1	<10	7	43	<1	<1	<0.1	<1	<1	<3
09...	--	--	--	--	--	--	--	--	--	--	--
09...	30	<1	<10	5	42	3	<1	<0.1	<1	<1	5
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
JUN											
24...	--	--	--	--	--	--	--	--	--	--	--
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--
06...	25	<1	<10	2	89	<5	5	<0.1	<1	<1	5
06...	--	--	--	--	--	--	--	--	--	--	--
06...	30	<1	<10	3	47	<5	3	<0.1	<1	<1	5
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--

08158200 WALNUT CREEK AT DESSAU ROAD, AUSTIN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 30°22'30", long 97°39'37", Travis County, Hydrologic Unit 12090205, on downstream side of bridge on Dessa Road and 8.4 mi northeast of the State Capitol Building in Austin.

DRAINAGE AREA.--26.2 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1975 to current year.

GAGE.--Digital water-stage recorder and crest-stage gage. Datum of gage is 553.44 ft above National Geodetic Vertical Datum of 1979.

REMARKS.--Additional storm rainfall-runoff data for this site can be obtained from the report "Hydrologic Data for Urban Studies in the Austin, Texas Metropolitan Area, 1984". Two recording rain gages in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,600 ft^3/s May 25, 1981 (gage height, 26.20 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,244 ft^3/s May 17 (gage height, 11.48 ft).

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
JAN 28...	0830	5.7	697	8.90	7.0	10	1.8	10.0	0.4	100	K52	330

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
JAN 28...	75	120	7.0	39	1	2.4	254	64	51	0.4	4.1	440

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
JAN 28...	7	2	2.65	0.05	2.70	0.03	0.87	0.9	0.78	2.9	1

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN 28...	80	<1	<10	<1	25	1	10	<0.1	<1	<1	13

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX

LOCATION.--Lat 30°16'59", long 97°39'17", Travis County, Hydrologic Unit 12090205, on left bank 190 ft downstream from bridge on Farm Road 969, 0.8 mi downstream from Little Walnut Creek, 2.8 mi upstream from Colorado River, 5.2 mi east of the State Capitol Building in Austin, and 2.8 mi upstream from mouth.

DRAINAGE AREA.--51.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 425.96 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversion. Station is part of hydrologic research project to study the rainfall-runoff relation for urban areas. Five recording rain gages are located in the watershed above this station.

AVERAGE DISCHARGE.--20 years, 24.4 ft³/s (6.46 in/yr), 17,680 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft³/s May 25, 1981 (gage height, 27.24 ft); no flow at times in 1967, 1971, and 1982-84. Maximum stage since at least 1891, tnat of May 25, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1935, reached a stage of 24 ft, backwater from Colorado River. A flood in 1919 reached a stage of 22 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 14	2400	2,410	13.79	May 9	2245	2,120	13.08
Oct. 19	1245	3,170	15.45	May 17	1630	*4,810	*18.52
Apr. 30	2330	3,070	15.25	Sept. 6	1000	2,250	13.42
May 1	1015	1,520	11.51				

Minimum daily discharge, no flow July 23, 27 to Aug 3, 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	23	24	11	8.9	6.2	4.8	452	40	5.1	.00	50
2	14	50	21	12	8.5	6.6	4.3	18	14	4.8	.00	27
3	13	12	20	11	169	6.5	5.8	11	152	4.5	.00	21
4	12	9.1	19	11	43	6.4	4.5	8.5	25	4.2	2.9	8.9
5	12	8.3	17	11	17	6.8	4.1	8.4	26	3.6	6.1	4.7
6	12	8.2	16	11	14	6.8	3.8	7.5	17	3.3	3.0	519
7	12	7.7	16	11	14	6.3	3.8	6.9	13	5.3	.05	32
8	11	7.9	16	15	14	6.4	3.9	7.4	17	4.7	.01	16
9	11	7.7	14	17	16	6.4	3.7	198	14	3.6	.00	18
10	12	7.6	102	11	14	6.4	3.0	188	9.0	2.6	.00	13
11	11	18	126	11	13	7.6	3.0	15	140	2.0	34	9.0
12	10	12	29	9.5	12	12	3.0	11	24	1.7	8.6	8.6
13	9.6	9.8	24	9.6	11	5.0	3.0	10	18	2.2	2.8	7.1
14	89	8.3	22	9.8	11	4.5	2.6	9.3	16	3.3	1.8	5.4
15	233	14	20	9.6	10	5.8	2.4	340	13	3.5	1.6	5.4
16	11	50	19	9.6	11	4.8	3.3	30	10	2.5	2.0	8.0
17	9.0	17	18	12	12	4.2	2.7	830	194	1.6	2.2	6.0
18	11	12	17	9.7	11	10	2.7	75	23	.60	.93	5.1
19	590	22	17	9.5	8.8	5.4	2.7	32	19	.28	.60	4.8
20	27	23	16	9.1	7.9	4.5	4.4	24	17	.15	.72	71
21	16	13	16	9.1	7.7	4.5	2.7	20	14	.13	.85	43
22	14	12	15	9.0	7.6	4.7	2.7	15	12	.02	.95	15
23	10	12	14	8.5	7.7	5.0	2.7	11	10	.00	1.6	11
24	8.7	185	14	8.7	7.6	5.8	2.6	9.0	9.2	.01	10	7.2
25	7.9	28	13	8.8	7.6	6.4	2.7	116	8.9	1.2	3.9	5.8
26	7.4	18	13	8.0	7.6	7.1	2.5	11	8.0	.32	2.9	6.7
27	6.8	556	13	8.3	7.1	7.8	2.3	7.8	7.6	.00	1.2	7.0
28	9.3	51	13	8.6	6.2	7.7	2.3	6.2	8.5	.00	5.3	7.5
29	16	35	13	8.7	---	7.3	2.0	5.6	6.6	.00	2.6	6.4
30	19	30	12	8.8	---	5.8	135	5.4	5.7	.00	1.8	4.7
31	19	---	12	9.1	---	5.3	---	25	---	.00	1.6	---
TOTAL	1259.7	1267.6	721	316.0	485.2	196.0	229.0	2514.0	891.5	61.21	100.21	954.3
MEAN	40.6	42.3	23.3	10.2	17.3	6.32	7.63	81.1	29.7	1.97	3.23	31.8
MAX	590	556	126	17	169	12	135	830	194	5.3	34	519
MIN	6.8	7.6	12	8.0	6.2	4.2	2.0	5.4	5.7	.00	.00	4.7
CFSM	.79	.82	.45	.20	.34	.12	.15	1.58	.58	.04	.06	.62
IN.	.91	.92	.52	.23	.35	.14	.17	1.82	.65	.04	.07	.69
AC-FT	2500	2510	1430	627	962	389	454	4990	1770	121	199	1890

CAL YR 1985 TOTAL 9951.27 MEAN 27.3 MAX 590 MIN .15 CFSM .53 IN. 7.22 AC-FT 19740
WTR YR 1986 TOTAL 8995.72 MEAN 24.6 MAX 830 MIN .00 CFSM .48 IN. 6.52 AC-FT 17840

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: April 1976 to current year. Sediment records: December 1977 to July 1982. Radiochemical analyses: January 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN 28...	0955	9.2	634	9.00	7.0	7	1.7	12.0	--	0.5	2800	120
APR 07...	0935	1.4	653	7.70	22.0	10	0.6	8.4	97	1.3	77	1300
JUN 24...	1110	9.2	577	7.80	27.0	3	1.5	13.9	177	0.3	1100	140
AUG 21...	0735	0.15	483	7.60	27.0	5	6.6	5.3	67	0.5	300	560
SEP 06...	1125	1520	159	7.80	25.0	--	1500	--	--	5.6	110000	110000

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
JAN 28...	280	80	100	7.4	33	0.9	2.6	200	74	52	0.4	2.3
APR 07...	270	78	93	8.0	34	1	3.8	187	75	54	0.5	6.3
JUN 24...	230	67	83	6.4	27	0.8	3.1	167	56	41	0.4	7.1
AUG 21...	180	61	62	5.6	25	0.9	4.0	117	47	45	0.4	6.2
SEP 06...	80	19	29	1.9	5.0	0.3	2.7	61	24	5.7	0.2	4.2

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
JAN 28...	390	9	1	0.98	0.02	1.00	0.05	0.55	0.6	0.04	1.8	<1
APR 07...	390	10	1	0.08	0.02	0.10	0.27	0.43	0.7	0.02	5.0	--
JUN 24...	320	1	<1	0.59	0.01	0.60	0.03	0.37	0.4	0.04	2.8	--
AUG 21...	270	19	2	--	<0.01	<0.10	0.03	0.17	0.2	0.01	4.7	--
SEP 06...	110	--	--	0.35	0.05	0.40	0.10	0.8	0.9	2.30	47	2

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN 28...	71	<1	<10	3	<3	<1	9	<0.1	<1	<1	9
APR 07...	--	--	--	--	--	--	--	--	--	--	--
JUN 24...	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--
SEP 06...	22	<1	<10	<1	48	<5	7	0.1	<1	<1	5

08158640 WALNUT CREEK AT SOUTHERN PACIFIC RAILROAD BRIDGE, AUSTIN, TX
(Reconnaissance partial-record station)

LOCATION.--Lat 30°15'58", long 97°39'24", Travis County, Hydrologic Unit 12090205, at Southern Pacific Railroad bridge, 1.2 mi south of Webberville Road, and 5.0 mi east of the State Capitol in Austin.

DRAINAGE AREA.--53.5 mi .

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to September 1986. Radiochemical analyses: January 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN												
28...	1030	45	721	7.40	18.0	30	6.0	7.3	78	8.4	K28	150
APR												
07...	1025	70	672	6.90	24.5	15	2.4	5.7	69	>7.7	K4	K19
JUN												
24...	1345	55	688	7.30	29.0	5	2.2	12.7	--	0.9	240	K56
AUG												
25...	1230	24	616	7.30	30.0	5	3.9	7.4	--	0.6	220	96

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
JAN												
28...	180	50	47	15	74	2	9.7	129	79	91	1.3	9.0
APR												
07...	150	20	36	14	67	2	9.4	128	68	76	1.0	9.9
JUN												
24...	180	86	50	14	70	2	9.1	97	86	78	1.1	8.9
AUG												
25...	150	80	36	15	61	2	10	72	59	78	0.8	9.7

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
JAN												
28...	400	13	4	4.70	1.10	5.80	4.70	2.7	7.4	5.60	14	1
APR												
07...	360	11	8	1.20	1.60	2.80	3.40	1.3	4.7	7.20	14	--
JUN												
24...	380	3	3	11.0	0.02	11.0	0.04	1.4	1.4	0.15	7.0	--
AUG												
25...	310	8	6	13.0	0.02	13.0	0.05	1.7	1.7	0.08	7.7	--

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN											
28...	27	<1	<10	<1	38	2	20	<0.1	<1	<1	23
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
JUN											
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
25...	--	--	--	--	--	--	--	--	--	--	--

08158650 COLORADO RIVER BELOW AUSTIN, TX
(Low-flow partial-record station)

LOCATION.--Lat 30°12'28", long 97°38'15", Travis County, Hydrologic Unit 12090205, at bridge on Farm Road 973, 0.3 mi northeast of intersection of State Highway 71 and Farm Road 973, 8.8 mi downstream from Govalle Sewage Treatment Plant outfall, and 9.6 mi downstream from gaging station at Austin.

PERIOD OF RECORD.--Chemical and biochemical analyses: February 1968 to current year. Pesticide analyses: February 1975 to September 1986.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT 09...	1300	615	7.30	24.0	5	1.0	4.8	57	0.9	K14	150	210
DEC 10...	0930	603	7.30	18.5	5	36	3.4	37	2.0	K14	540	200
MAR 24...	1020	546	7.70	20.0	5	1.4	11.4	126	0.7	K5	32	210
MAY 01...	1055	401	7.30	20.0	40	200	6.7	74	3.7	23000	51000	150
JUL 15...	1155	510	8.20	26.5	3	3.0	8.6	107	0.1	320	3300	200
AUG 27...	1200	492	7.60	27.0	5	2.7	7.2	91	0.1	320	K1300	200

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 09...	51	51	20	40	1	4.8	159	41	61	0.6	8.0	320
DEC 10...	54	55	16	32	1	4.4	149	46	52	0.4	10	310
MAR 24...	44	53	19	31	1	4.0	167	40	46	0.4	6.3	300
MAY 01...	23	39	13	18	0.7	3.9	128	20	36	0.2	5.7	210
JUL 15...	41	48	19	25	0.8	3.4	157	32	42	0.3	7.2	270
AUG 27...	38	49	18	25	0.8	3.4	159	30	40	0.3	8.1	270

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
OCT 09...	3	1	1.08	0.42	1.50	0.68	0.52	1.2	0.78	3.3	1
DEC 10...	6	1	1.97	0.33	2.30	0.58	0.72	1.3	1.10	4.0	--
MAR 24...	2	1	1.56	0.14	1.70	0.06	0.64	0.7	0.80	3.3	1
MAY 01...	332	48	0.61	0.09	0.70	0.33	0.67	1.0	0.45	11	--
JUL 15...	7	4	0.68	0.02	0.70	0.04	0.46	0.5	0.22	3.3	1
AUG 27...	5	3	0.59	0.01	0.60	0.10	0.2	0.3	0.19	37	1

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 09...	78	<1	<10	1	<3	<1	9	<0.1	<1	<1	9
DEC 10...	--	--	--	--	--	--	--	--	--	--	--
MAR 24...	59	2	<10	1	6	3	6	<0.1	<1	<1	18
MAY 01...	--	--	--	--	--	--	--	--	--	--	--
JUL 15...	63	<1	<10	1	5	<5	5	<0.1	<1	<1	<3
AUG 27...	62	<1	<10	<1	5	<5	4	<0.1	<1	<1	4

08158650 COLORADO RIVER BELOW AUSTIN, TX--Continued
(Low-flow partial-record station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
OCT 09...	--	--	--	--	--	--	--	--	--	--	--
DEC 10...	--	--	--	--	--	--	--	--	--	--	--
MAR 24...	<0.1	<0.1	<0.1	<0.5	0.1	<0.1	<0.1	<0.5	<0.5	<0.1	<0.1
MAY 01...	--	--	--	--	--	--	--	--	--	--	--
JUL 15...	--	--	--	--	--	--	--	--	--	--	--
AUG 27...	--	--	--	--	--	--	--	--	--	--	--

08158700 ONION CREEK NEAR DRIFTWOOD, TX

LOCATION.--Lat 30 04'58", long 98 00'29", Hays County, Hydrologic Unit 12090205, on left bank at upstream side of low-water crossing on Farm Road 150, 3.2 mi southeast of Driftwood, and 10 mi west of Buda.

DRAINAGE AREA.--124 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1958, November 1961 to June 1979 (periodic discharge measuremrents only), July 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage 878.13 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Station is part of a hydrologic research project to study rainfall-runoff relationship in the Austin urban-rural areas. There is a recording rain gage located in the watershed above station.

AVERAGE DISCHARGE.--7 years 41.2 ft³/s (4.51 in/yr) 29,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,990 ft³/s June 6, 1985 (gage height, 16.38 ft); no flow for several days in August and September 1984 and Oct. 1-10, 1984.

Flood of Mar. 20, 1979, reached a stage of 11.48 ft (discharge, 4,980 ft³/s), on basis of peak flow over dam, 1.5 mi downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 27	0600	1,230	6.42	May 10	0215	*8,420	*15.72
Dec. 10	1830	566	5.51	May 17	1930	3,140	9.00
Dec. 11	1045	893	5.98	June 12	1945	2,150	7.37
Feb. 3	2015	1,180	6.37	June 17	0115	711	5.74

Minimum daily discharge, 2.2 ft³/s Sept. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	25	212	71	15	45	15	26	109	53	10	2.9
2	3.7	29	190	72	15	45	14	38	112	48	9.5	3.6
3	3.6	28	173	66	223	48	13	21	101	44	9.5	2.6
4	3.3	25	161	61	213	44	14	17	104	41	8.8	2.2
5	3.0	24	187	54	121	42	12	16	103	39	8.6	2.3
6	3.3	25	143	53	104	42	12	15	89	37	8.5	21
7	3.5	26	140	52	94	41	10	15	133	36	7.8	5.8
8	3.4	26	132	53	89	41	9.4	14	137	35	8.2	7.4
9	3.6	26	128	54	87	39	11	242	138	33	8.4	8.0
10	3.7	26	211	49	87	38	11	1500	114	31	6.9	7.1
11	3.5	27	409	44	82	36	11	143	122	29	7.9	13
12	3.2	25	244	41	80	39	12	105	350	27	8.8	8.6
13	2.9	20	218	37	77	36	12	76	200	26	7.5	6.4
14	3.2	21	196	36	79	35	10	68	143	25	6.8	5.4
15	21	25	186	35	77	34	10	84	139	24	6.2	4.6
16	31	25	172	33	75	32	11	78	129	23	5.6	4.6
17	20	31	167	34	73	31	10	546	216	21	5.6	4.6
18	18	30	157	32	70	32	9.6	263	153	22	4.9	4.3
19	123	30	145	29	65	29	9.4	160	142	22	4.2	4.3
20	120	40	141	26	62	27	11	141	127	20	3.9	4.4
21	49	27	135	26	58	26	10	132	116	19	4.4	4.4
22	41	25	137	24	56	29	12	116	106	18	4.4	4.2
23	39	24	132	21	55	26	12	112	94	17	4.7	4.0
24	35	107	124	22	54	26	15	102	84	16	5.2	3.6
25	30	133	116	21	53	26	11	95	78	15	5.8	3.4
26	29	112	102	18	51	24	11	121	73	14	4.3	3.4
27	30	787	99	16	50	23	10	119	70	13	3.6	3.4
28	26	326	95	16	46	21	11	102	64	12	3.4	3.5
29	25	263	89	16	---	20	11	101	61	12	3.3	3.6
30	34	238	81	14	---	19	11	115	56	12	2.8	3.4
31	30	---	77	15	---	18	---	103	---	11	2.7	---
TOTAL	748.5	2576	4899	1141	2211	1014	341.4	4786	3663	795	192.2	160.0
MEAN	24.1	85.9	158	36.8	79.0	32.7	11.4	154	122	25.6	6.20	5.33
MAX	123	787	409	72	223	48	15	1500	350	53	10	21
MIN	2.9	20	77	14	15	18	9.4	14	56	11	2.7	2.2
CFSM	.19	.69	1.27	.30	.64	.26	.09	1.24	.98	.21	.05	.04
IN.	.22	.77	1.47	.34	.66	.30	.10	1.44	1.10	.24	.06	.05
AC-FT	1480	5110	9720	2260	4390	2010	677	9490	7270	1580	381	317

CAL YR 1985 TOTAL 34477.2 MEAN 94.5 MAX 2850 MIN 1.2 CFSM .76 IN. 10.34 AC-FT 68390
WTR YR 1986 TOTAL 22527.1 MEAN 61.7 MAX 1500 MIN 2.2 CFSM .50 IN. 6.76 AC-FT 44680

08158700 ONION CREEK NEAR DRIFTWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1974 to current year. Pesticide analyses: January 1978 to September 1986. Radiochemical analyses: January 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN 29...	0940	24	494	8.70	13.0	7	0.4	10.0	98	0.4	21	20
APR 08...	0900	9.5	450	7.90	22.0	5	0.7	8.5	100	0.9	130	160
JUN 17...	1210	145	287	7.80	24.0	40	55	8.8	107	1.7	12000	K5200
23...	0920	98	485	8.00	25.0	3	2.0	8.1	101	0.3	150	140
AUG 21...	0958	24	463	7.80	29.0	5	0.4	6.7	--	0.3	36	66

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
JAN 29...	250	31	73	17	8.9	0.3	0.9	221	27	12	0.2	7.8
APR 08...	230	25	64	16	8.3	0.2	1.1	201	19	11	0.2	7.9
JUN 17...	140	15	43	7.9	3.9	0.1	2.2	125	11	5.6	0.1	8.5
23...	260	27	77	16	6.9	0.2	1.2	231	18	9.5	0.2	9.4
AUG 21...	230	40	62	18	8.7	0.3	1.3	189	32	14	0.2	12

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
JAN 29...	280	1	<1	0.19	0.01	0.20	0.01	0.29	0.3	<0.01	1.1	<1
APR 08...	250	1	1	--	<0.01	<0.10	<0.01	--	0.3	<0.01	1.3	--
JUN 17...	160	128	28	0.18	0.02	0.20	0.03	0.67	0.7	0.07	8.1	<1
23...	280	3	2	--	<0.01	0.20	0.04	0.16	0.2	0.01	1.5	--
AUG 21...	260	1	1	--	<0.01	<0.10	0.03	0.77	0.8	0.01	1.8	--

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN 29...	32	<1	<10	<1	<3	<1	4	<0.1	<1	<1	<3
APR 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 17...	100	<1	<10	1	40	<5	<10	<0.1	<1	<1	<10
23...	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX

LOCATION.--Lat 30°09'19", long 97°56'23", Hays County, Hydrologic Unit 12090205, 0.8 mi southeast of Farm Road 1826 and 5.9 mi northeast of Driftwood.

DRAINAGE AREA.--12.2 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to July 1979 (periodic discharge measurements only), October 1978 to June 1979 (peak discharges above base only), July 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 860 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges: Records good. Station is part of hydrographic research project to study rainfall-runoff relationship for the Austin urban-rural areas. There is a recording rain gage located in the watershed.

AVERAGE DISCHARGE.--7 years 5.75 ft³/s (6.40 in/yr) 4,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,330 ft³/s June 11, 1981 (gage height, 13.05 ft, from floodmarks), from slope-area measurements of peak flow; no flow in 1980 and 1983-84.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 9, 1919, reached a stage of 16.2 ft (discharge unknown) and was the highest since at least 1924, from information by local resident. A flood in 1915 was 2 ft higher than the 1939 flood, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 9	2215	*636	*5.59	No other peak greater than base discharge.			

Minimum discharge, 0.02 ft³/s Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.97	2.5	17	6.3	3.1	2.9	1.6	6.4	11	5.9	1.3	.28
2	.77	3.8	15	6.3	3.1	3.0	1.5	1.8	9.8	5.6	1.2	.35
3	.62	2.8	15	6.1	7.4	3.3	1.5	1.3	9.1	5.5	.97	.30
4	.55	2.5	15	5.7	8.2	2.9	1.6	1.2	9.5	5.1	.96	.28
5	.50	2.5	13	5.2	5.8	2.9	1.4	1.2	9.1	4.7	.99	.36
6	.48	2.5	13	5.2	5.4	2.9	1.4	1.1	8.6	4.1	1.0	2.8
7	.50	2.3	12	5.2	5.2	2.7	1.4	1.2	12	3.8	.97	1.2
8	.45	2.3	11	5.2	4.7	2.7	1.4	1.2	12	3.5	.91	.83
9	.48	2.3	11	5.2	4.6	2.7	1.2	47	11	3.4	.88	.66
10	.51	2.3	12	5.2	4.6	2.7	1.2	16	9.9	3.2	.77	.61
11	.51	4.8	15	4.9	4.6	2.5	1.2	8.0	9.9	2.9	.79	.55
12	.49	3.3	13	4.6	4.3	2.5	1.2	7.0	10	2.8	.82	.53
13	.45	3.3	12	4.3	4.3	2.3	1.1	6.5	9.8	2.5	.70	.55
14	.56	3.3	11	4.3	4.4	2.3	.94	6.3	9.1	2.5	.68	.49
15	1.3	3.6	11	4.1	4.2	2.1	.70	9.0	8.6	2.3	.61	.45
16	1.0	3.5	11	4.1	4.3	1.9	.70	7.3	8.3	2.3	.57	.47
17	.92	3.5	11	4.1	4.3	2.0	.70	44	14	2.1	.57	.51
18	1.1	3.7	9.9	4.1	4.1	2.0	.74	18	16	2.1	.53	.51
19	9.9	5.0	9.6	3.9	3.8	1.7	.80	16	13	2.1	.42	.51
20	6.2	4.8	9.4	3.8	3.5	1.7	.71	15	12	2.0	.38	.52
21	4.4	4.3	9.0	3.8	3.3	1.7	.63	14	11	1.7	.38	.51
22	4.1	4.3	9.0	3.5	3.1	1.7	.57	13	11	1.7	.37	.51
23	3.6	4.3	8.7	3.3	3.1	1.7	.57	12	11	1.7	.37	.51
24	3.3	7.2	8.2	3.3	3.1	1.7	.57	12	11	1.7	.41	.50
25	3.0	11	7.6	3.4	3.2	1.7	.57	11	9.9	1.7	.44	.45
26	2.9	9.9	7.5	3.2	3.1	1.7	.51	11	9.5	1.6	.39	.49
27	2.6	68	7.5	3.1	3.1	1.8	.51	11	8.7	1.6	.36	.43
28	2.5	23	7.2	3.1	3.1	1.7	.51	9.9	8.0	1.4	.33	.39
29	2.5	20	6.9	3.2	---	1.7	.62	9.4	7.4	1.4	.34	.40
30	2.5	19	6.9	3.1	---	1.6	.57	9.1	6.7	1.3	.30	.40
31	2.3	---	6.7	3.1	---	1.6	---	10	---	1.3	.29	---
TOTAL	61.96	235.6	332.1	133.9	119.0	68.3	28.62	337.9	306.9	85.5	20.00	17.35
MEAN	2.00	7.85	10.7	4.32	4.25	2.20	.95	10.9	10.2	2.76	.65	.58
MAX	9.9	68	17	6.3	8.2	3.3	1.6	47	16	5.9	1.3	2.8
MIN	.45	2.3	6.7	3.1	3.1	1.6	.51	1.1	6.7	1.3	.29	.28
CFSM	.16	.64	.88	.35	.35	.18	.08	.89	.84	.23	.05	.05
IN.	.19	.72	1.01	.41	.36	.21	.09	1.03	.94	.26	.06	.05
AC-FT	123	467	659	266	236	135	57	670	609	170	40	34

CAL YR 1985 TOTAL 3062.00 MEAN 8.39 MAX 360 MIN .09 CFSM .69 IN. 9.34 AC-FT 6070
WTR YR 1986 TOTAL 1747.13 MEAN 4.79 MAX 68 MIN .28 CFSM .39 IN. 5.33 AC-FT 3470

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1978 to current year. Pesticide analyses: June 1978 to September 1986. Radiochemical analyses: January 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN 29...	1010	3.3	552	8.70	12.0	7	0.8	9.8	94	0	84	K24
APR 09...	0915	1.2	521	7.70	20.5	5	1.2	9.0	100	0.5	26	780
MAY 01...	1105	28	447	7.60	22.0	10	25	7.9	92	2.1	13000	26000
01...	1246	16	433	7.80	21.5	10	12	7.8	90	2.1	11000	24000
JUN 23...	1015	14	534	8.00	25.0	3	1.8	7.9	98	0.3	100	100
AUG 21...	0930	0.45	488	7.50	28.0	5	0.4	4.4	--	0.4	K81	180

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
JAN 29...	290	52	86	18	10	0.3	0.8	237	34	17	0.2	7.8
APR 09...	250	34	73	17	9.4	0.3	1.1	218	36	15	0.2	9.4
MAY 01...	220	43	64	15	8.4	0.3	1.2	179	38	17	0.2	9.6
01...	210	41	63	14	8.2	0.3	1.3	174	38	15	0.2	9.4
JUN 23...	280	37	84	17	8.3	0.2	0.9	243	25	12	0.2	9.2
AUG 21...	240	37	66	18	10	0.3	1.1	202	28	18	0.2	16

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
JAN 29...	320	7	5	--	<0.01	0.30	0.03	0.37	0.4	<0.01	1.9	<1
APR 09...	290	1	1	--	<0.01	<0.10	0.02	0.18	0.2	<0.01	2.7	--
MAY 01...	260	28	10	--	0.01	<0.10	0.03	0.47	0.5	0.03	8.0	--
01...	250	14	4	0.09	0.01	0.10	0.02	0.38	0.4	0.02	6.6	--
JUN 23...	300	1	1	--	<0.01	0.20	0.05	0.15	0.2	0.08	1.8	--
AUG 21...	280	1	1	--	<0.01	<0.10	0.02	0.18	0.2	0.02	2.6	--

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN 29...	31	<1	<10	<1	<3	<1	8	<0.1	<1	<1	15
APR 09...	--	--	--	--	--	--	--	--	--	--	--
MAY 01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
JUN 23...	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	--	--	--	--	--	--	--	--	--

08158840 SLAUGHTER CREEK AT FARM ROAD 1826 NEAR AUSTIN, TX

LOCATION.--Lat 30 12'32", long 97 54'11", Travis County, Hydrologic Unit 12090205, 1.7 mi south the intersection of U.S. Highway 290 and Farm Road 1826 and 11.9 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--8.24 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 876.14 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversion. There is a recording rain gage in the watershed.

AVERAGE DISCHARGE.--8 years (water years 1979-86), 5.57 ft³/s (9.18 in/yr), 4,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,080 ft³/s June 11, 1981 (gage height, 10.79 ft); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 9	2145	*1,640	(a)*8.00	May 17	1530	1,300	7.53
May 15	0800	843	6.73				

a From floodmark.

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.32	71	3.4	.73	.69	.46	11	97	2.2	.05	.00
2	.06	1.4	50	3.4	.73	.73	.46	.85	50	2.1	.04	.00
3	.05	.45	45	3.1	9.1	.73	.42	.56	34	1.7	.03	.00
4	.06	.34	39	2.9	7.3	.73	.42	.42	34	1.6	.02	.00
5	.04	.30	28	2.4	2.8	.73	.42	.42	32	1.4	.03	.00
6	.04	.30	24	2.4	2.0	.72	.42	.42	23	1.1	.02	28
7	.04	.24	22	2.3	2.1	.66	.42	.42	119	1.0	.01	.29
8	.04	.24	19	2.3	1.9	.67	.40	.42	133	1.1	.01	.13
9	.04	.24	17	2.4	1.8	.76	.48	164	104	.68	.01	.08
10	.04	.24	21	2.4	1.8	.81	.48	98	61	.55	.00	.06
11	.04	13	58	2.2	1.7	.71	.46	17	44	.44	.00	.06
12	.03	1.0	32	2.0	1.6	.86	.41	9.2	38	.36	.00	.05
13	.03	.92	25	1.8	1.5	.73	.32	6.4	32	.38	.00	.10
14	.24	.89	21	1.8	1.5	.73	.22	4.9	24	.27	.00	.09
15	.86	1.0	19	1.6	1.5	.70	.18	214	20	.24	.00	.09
16	.21	1.5	17	1.6	1.5	.79	.18	100	15	.22	.00	.07
17	.19	1.5	15	1.5	1.4	.82	.18	272	52	.19	.00	.06
18	.21	1.5	13	1.5	1.2	.82	.18	236	23	.18	.00	.05
19	32	30	11	1.3	1.1	.51	.18	139	23	.15	.00	3.7
20	1.4	8.6	11	1.3	1.1	.44	.13	80	16	.19	.00	.53
21	.87	7.0	8.8	1.2	1.0	.46	.10	56	13	.12	.00	.33
22	.85	5.9	8.3	1.0	.95	.46	.08	41	11	.13	.00	.31
23	.62	5.7	7.7	1.0	.91	.48	.07	31	9.2	.11	.00	.27
24	.49	138	6.3	1.0	.91	.52	.07	22	7.2	.09	.00	.23
25	.41	126	5.1	.99	.91	.52	.07	18	7.0	.08	.00	.19
26	.33	81	4.8	.91	.93	.59	.07	18	5.5	.09	.00	.14
27	.27	401	4.8	.82	.81	.58	.07	18	4.5	.08	.00	.12
28	.23	211	4.5	.82	.66	.58	.07	14	3.6	.08	.00	.10
29	.20	149	4.1	.77	---	.46	.06	11	3.3	.07	.00	.10
30	.20	112	4.1	.73	---	.46	.15	18	2.7	.06	.00	.10
31	.13	---	3.7	.73	---	.46	---	28	---	.05	.00	---
TOTAL	40.29	1300.58	620.2	53.57	51.44	19.91	7.63	1630.01	1041.0	17.01	.22	35.25
MEAN	1.30	43.4	20.0	1.73	1.84	.64	.25	52.6	34.7	.55	.01	1.17
MAX	32	401	71	3.4	9.1	.86	.48	272	133	2.2	.05	28
MIN	.03	.24	3.7	.73	.66	.44	.06	.42	2.7	.05	.00	.00
CFSM	.16	5.27	2.43	.21	.22	.08	.03	6.38	4.21	.07	.00	.14
IN.	.18	5.87	2.80	.24	.23	.09	.03	7.36	4.70	.08	.00	.16
AC-FT	80	2580	1230	106	102	39	15	3230	2060	34	.4	70

CAL YR 1985 TOTAL 4041.57 MEAN 11.1 MAX 401 MIN .00 CFSM 1.35 IN. 18.25 AC-FT 8020
WTR YR 1986 TOTAL 4817.11 MEAN 13.2 MAX 401 MIN .00 CFSM 1.60 IN. 21.75 AC-FT 9550

08158840 SLAUGHTER CREEK AT FARM ROAD 1826 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: June 1983 to current year. Pesticide analyses: June 1983 to September 1986.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN 29...	1030	0.82	736	8.40	13.5	5	0.7	9.8	97	0	K12	K3
APR 08...	1002	1.2	714	7.50	22.5	5	1.1	9.9	118	1.3	K0	120
MAY 01...	1017	36	683	7.30	21.5	10	3.5	6.8	78	2.7	14000	14000
JUN 16...	0936	13	750	7.80	26.0	3	1.1	7.8	99	0.5	140	110
SEP 06...	1015	180	314	7.70	24.0	--	79	--	--	2.1	18000	43000

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
JAN 29...	360	96	100	26	26	0.6	0.7	261	68	51	0.2	6.5
APR 08...	310	81	87	23	24	0.6	0.5	231	68	56	0.2	5.8
MAY 01...	300	89	83	23	24	0.6	1.0	213	60	63	0.2	8.1
JUN 16...	320	69	88	24	27	0.7	0.8	250	60	45	0.2	7.3
SEP 06...	130	44	34	10	13	0.5	2.2	82	37	21	0.2	5.0

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN 29...	430	1	1	0.29	0.01	0.30	0.03	0.27	0.3	0.01	1.2	<1
APR 08...	400	5	1	--	<0.01	<0.10	0.02	0.28	0.3	0.01	4.0	--
MAY 01...	390	2	2	--	0.01	<0.10	0.05	0.35	0.4	0.02	10	--
JUN 16...	400	14	5	--	<0.01	0.30	0.05	0.15	0.2	0.01	2.2	--
SEP 06...	170	--	--	0.16	0.04	0.20	0.08	0.62	0.7	0.01	9.7	3

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 29...	38	<1	<10	<1	<3	<1	12	<0.1	<1	<1	10
APR 08...	--	--	--	--	--	--	--	--	--	--	--
MAY 01...	--	--	--	--	--	--	--	--	--	--	--
JUN 16...	--	--	--	--	--	--	--	--	--	--	--
SEP 06...	22	<1	<10	<1	32	<5	4	<0.1	<1	<1	8

08158920 WILLIAMSON CREEK AT OAK HILL, TX

LOCATION.--Lat 30°06'06", long 97°51'36", Travis County, Hydrologic Unit 12090205, at downstream side of bridge on U.S. Highway 290 in Oak Hill, 0.8 mi east of the intersection of U.S. Highway 290 and State Highway 71, and 7.7 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--6.30 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1974 to February 1977 (periodic discharge measurements only), January 1978 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 798.68 ft above National Geodetic Vertical Datum of 1929 (levels from city of Austin bench mark).

REMARKS.--Estimated daily discharges: Nov. 25 to Dec. 10. Records fair except those for estimated daily discharges, which are poor. Station is part of hydrologic-research project to study rainfall-runoff relations for the Austin urban-rural areas. Station is equipped with an automatic water-quality sampler. There are two recording rain gages located in the watershed above this station.

AVERAGE DISCHARGE.--8 years, 4.52 ft³/s (9.74 in/yr), 3,270 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,170 ft³/s June 11, 1981 (gage height, 8.55 ft); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	1100	814	4.47	May 9	2130	2,220	6.58
Nov. 19	1700	852	4.54	May 15	0715	1,370	5.38
Nov. 24	0915	633	4.11	May 17	1530	1,020	4.84
Nov. 27	unknown	*unknown	*unknown	Sept. 6	0815	1,040	4.87
May 1	0815	1,380	5.39				

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.6	27	1.6	.56	.93	.02	59	18	.75	.00	.00
2	.00	4.5	20	1.6	.68	.73	.02	.07	11	.60	.00	.00
3	.00	.22	16	1.2	23	.66	.01	.01	8.3	.50	.00	.00
4	.00	.14	12	1.2	5.1	.54	.02	.01	10	.40	.00	.00
5	.00	.16	10	.89	2.9	.51	.01	.01	7.1	.38	.00	.00
6	.00	.10	9.0	.85	2.3	.54	.06	.01	5.4	.37	.00	94
7	.00	.07	8.0	.86	2.0	.46	.01	.01	15	.36	.00	.39
8	.00	.08	7.2	1.5	1.6	.46	.01	.01	13	.26	.00	.10
9	.00	.07	6.5	1.3	1.7	.44	.22	202	18	.23	.00	.02
10	.00	.04	12	.93	1.7	.37	.11	41	9.8	.17	.00	.00
11	.00	6.5	18	.85	1.6	.41	.01	16	8.5	.16	.00	.00
12	.00	.38	11	.78	1.1	.59	.01	7.9	15	.13	.00	.00
13	.00	.26	9.3	.70	.92	.29	.01	4.5	9.6	.10	.00	.00
14	16	.14	8.0	.52	.89	.29	.00	3.0	7.4	.09	.00	.00
15	14	.72	6.9	.47	.75	.29	.00	119	6.1	.06	.00	.00
16	.08	1.2	6.5	.41	.84	.28	.00	31	4.9	.05	.00	.00
17	.06	.64	5.4	.37	.80	.20	.00	137	13	.02	.00	.00
18	.30	.56	4.7	.37	.69	.34	.00	46	6.5	.02	.00	.00
19	46	47	4.4	.37	.68	.12	.00	29	5.5	.01	.00	9.0
20	2.4	15	4.0	.37	.73	.10	.00	21	3.7	.01	.00	.36
21	.92	8.0	3.4	.37	.74	.10	.00	16	3.0	.00	.00	.01
22	.33	5.5	3.0	.34	.78	.11	.00	13	2.5	.00	.00	.00
23	.19	4.6	2.8	.29	.84	.11	.00	9.9	2.3	.00	.00	.00
24	.14	60	2.6	.35	.92	.12	.00	8.7	2.7	.00	.00	.00
25	.09	25	2.3	.37	.97	.12	.00	7.6	1.7	.00	.00	.00
26	.07	20	2.3	.37	.96	.12	.00	8.3	1.4	.00	.00	.00
27	.03	450	2.2	.40	.96	.13	.00	6.5	.97	.00	.00	.00
28	.02	200	1.6	.45	.93	.13	.00	5.3	.90	.00	.00	.00
29	.06	80	1.5	.45	---	.04	.00	4.7	.72	.00	.00	.00
30	.05	40	1.5	.46	---	.02	5.3	5.1	.70	.00	.00	.00
31	.02	---	1.5	.50	---	.04	---	9.8	---	.00	.00	---
TOTAL	80.76	972.48	230.6	21.49	57.64	9.59	5.82	811.43	212.69	4.67	.00	103.88
MEAN	2.61	32.4	7.44	.69	2.06	.31	.19	26.2	7.09	.15	.00	3.46
MAX	46	450	27	1.6	23	.93	5.3	202	18	.75	.00	94
MIN	.00	.04	1.5	.29	.56	.02	.00	.01	.70	.00	.00	.00
CFSM	.41	5.14	1.18	.11	.33	.05	.03	4.16	1.13	.02	.00	.55
IN.	.48	5.74	1.36	.13	.34	.06	.03	4.79	1.26	.03	.00	.61
AC-FT	160	1930	457	43	114	19	12	1610	422	9.3	.00	206

CAL YR 1985 TOTAL 2403.27 MEAN 6.58 MAX 450 MIN .00 CFSM 1.04 IN. 14.19 AC-FT 4770
WTR YR 1986 TOTAL 2511.05 MEAN 6.88 MAX 450 MIN .00 CFSM 1.09 IN. 14.83 AC-FT 4980

08158920 WILLIAMSON CREEK AT OAK HILL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Occasional discharge measurements: January 1974 to current year. Chemical and biochemical analyses: January 1974 to current year. Pesticide analyses: June 1978 to September 1986. Radiochemical analyses: April 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV												
19...	1630	40	260	--	--	--	--	--	--	9.9	340000	46000
19...	1645	384	220	--	--	80	240	--	--	--	--	--
19...	1700	852	193	--	--	--	--	--	--	11	K130000	220000
19...	1715	814	217	7.80	--	--	--	--	--	--	--	--
19...	1730	573	230	--	--	70	350	--	--	--	--	--
19...	1745	349	223	--	--	--	--	--	--	9.0	K130000	380000
24...	0830	25	375	--	--	--	--	--	--	4.2	22000	26000
24...	0845	179	209	7.70	--	--	--	--	--	--	--	--
24...	0900	614	179	--	--	90	380	--	--	--	--	--
24...	0915	633	169	--	--	--	--	--	--	2.7	K79000	100000
24...	0930	461	185	--	--	100	350	--	--	--	--	--
24...	0945	315	258	--	--	--	--	--	--	3.1	K86000	100000
JAN												
27...	1010	0.37	658	8.20	8.0	5	0.4	14.1	--	0	K64	K56
FEB												
03...	1400	36	179	--	--	--	--	--	--	>9.1	K13000	K45000
03...	1415	195	121	--	--	70	410	--	--	--	--	--
03...	1430	203	131	--	--	--	--	--	--	7.6	K14000	50000
03...	1445	195	143	7.70	--	--	--	--	--	--	--	--
03...	1500	136	148	--	--	70	320	--	--	--	--	--
03...	1515	99	147	--	--	--	--	--	--	4.7	25000	61000
MAR												
28...	0855	0.14	690	7.50	18.0	10	0.6	6.4	68	0.4	K7	92
MAY												
01...	1020	70	267	6.90	20.0	70	250	7.8	87	6.4	50000	290000
09...	1945	56	262	--	--	100	130	--	--	13	22000	58000
09...	2000	782	153	--	--	--	--	--	--	--	--	--
09...	2015	772	124	7.80	--	--	--	--	--	--	--	--
09...	2030	1020	121	--	--	--	--	--	--	6.7	K250000	150000
09...	2045	1460	131	--	--	100	200	--	--	--	--	--
09...	2100	1870	138	--	--	--	--	--	--	15	100000	160000
JUN												
16...	1000	4.9	695	8.10	25.0	5	1.5	9.2	115	0.7	900	640
SEP												
06...	0200	60	230	--	--	--	--	--	--	18	390000	96000
06...	0230	497	128	--	--	--	--	--	--	10	98000	160000
06...	0300	301	123	--	--	--	--	--	--	--	--	--
06...	0330	111	156	--	--	--	240	--	--	--	--	--
06...	0400	68	241	--	--	--	--	--	--	4.0	59000	200000
06...	0430	30	118	--	--	--	--	--	--	--	--	--

08158920 WILLIAMSON CREEK AT OAK HILL, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)
NOV												
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	95	11	28	6.1	5.5	0.3	2.8	84	13	7.8	0.2	6.5
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	110	18	31	6.7	4.6	0.2	2.0	87	17	7.0	0.1	3.9
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
27...	360	58	98	28	22	0.5	1.0	302	40	33	0.3	1.8
FEB												
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	65	9	20	3.7	3.3	0.2	2.3	56	11	4.7	<0.1	3.6
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
28...	340	47	92	26	21	0.5	1.2	290	41	33	0.3	3.5
MAY												
01...	100	12	29	6.9	14	0.6	4.1	89	21	14	0.2	5.7
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	50	4	16	2.5	2.4	0.2	2.8	46	10	3.7	<0.1	3.7
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
16...	330	38	90	26	17	0.4	1.0	294	36	23	0.2	7.3
SEP												
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS- SOLVED (UG/L AS AS)
NOV												
19...	--	--	--	--	<0.01	0.30	0.04	1.7	1.7	0.29	47	--
19...	--	1330	148	--	<0.01	0.50	0.02	3.5	3.5	0.47	57	--
19...	--	--	--	--	<0.01	0.30	0.03	4.7	4.7	0.75	72	--
19...	120	--	--	0.28	0.02	0.30	0.06	4.0	4.1	0.74	40	--
19...	--	830	144	0.38	0.02	0.40	0.06	3.3	3.4	0.80	33	--
19...	--	--	--	0.48	0.02	0.50	0.06	2.5	2.6	0.54	23	--
24...	--	--	--	--	<0.01	0.20	0.02	2.5	2.5	0.64	28	--
24...	120	--	--	0.49	0.01	0.50	0.02	2.0	2.0	0.56	34	--
24...	--	644	136	--	<0.01	0.30	0.02	2.2	2.2	0.51	37	--
24...	--	--	--	--	<0.01	0.20	0.02	2.6	2.6	0.47	39	--
24...	--	536	80	--	<0.01	0.20	0.02	2.4	2.4	0.34	29	--
24...	--	--	--	--	<0.01	0.30	0.03	1.4	1.4	0.35	22	--
JAN												
27...	410	1	1	0.39	0.01	0.40	0.02	0.28	0.3	0.19	1.5	1
FEB												
03...	--	--	--	0.18	0.02	0.20	0.04	0.76	0.8	0.42	57	--
03...	--	1070	106	0.27	0.03	0.30	0.02	1.1	1.1	0.19	31	--
03...	--	--	--	0.26	0.04	0.30	0.03	0.87	0.9	0.18	25	--
03...	82	--	--	0.35	0.05	0.40	0.03	1.4	1.4	0.21	20	--
03...	--	634	62	0.37	0.03	0.40	0.03	1.6	1.6	0.18	21	--
03...	--	--	--	0.36	0.04	0.40	0.03	0.57	0.6	0.17	18	--
MAR												
28...	390	2	<1	--	<0.01	<0.10	0.03	0.27	0.3	0.21	3.6	--
MAY												
01...	150	480	72	0.55	0.05	0.60	0.87	1.6	2.5	0.97	23	--
09...	--	370	76	0.56	0.04	0.60	0.19	2.2	2.4	0.59	39	--
09...	--	--	--	0.47	0.03	0.50	0.16	3.2	3.4	0.69	44	1
09...	69	--	--	0.57	0.03	0.60	0.13	2.7	2.8	0.58	50	--
09...	--	--	--	0.56	0.04	0.60	0.14	1.8	1.9	0.41	34	--
09...	--	1040	176	0.47	0.03	0.50	0.12	2.0	2.1	0.26	38	--
09...	--	--	--	0.46	0.04	0.50	0.09	4.6	4.7	0.97	63	2
JUN												
16...	380	2	1	--	<0.01	0.40	0.04	0.26	0.3	0.15	2.7	--
SEP												
06...	--	--	--	0.18	0.02	0.20	0.07	1.6	1.7	0.85	46	--
06...	--	--	--	0.15	0.05	0.20	0.06	0.94	1.0	0.76	45	--
06...	--	--	--	--	--	--	--	--	--	--	--	2
06...	--	392	--	0.33	0.07	0.40	0.09	1.7	1.8	0.43	16	--
06...	--	--	--	0.65	0.05	0.70	0.06	1.1	1.2	0.44	14	--
06...	--	--	--	--	--	--	--	--	--	--	--	2

08158920 WILLIAMSON CREEK AT OAK HILL, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JAN											
27...	38	<1	<10	<1	<3	<1	2	<0.1	<1	<1	11
FEB											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	15	<1	<10	6	42	4	1	<0.1	<1	<1	<3
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	14	<1	<10	5	25	1	<1	<0.1	<1	<1	<3
JUN											
16...	--	--	--	--	--	--	--	--	--	--	--
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	12	<1	<10	1	67	<5	3	<0.1	<1	<1	8
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	11	<1	<10	1	45	<5	2	<0.1	<1	<1	7

COLORADO RIVER BASIN

08158970 WILLIAMSON CREEK AT JIMMY CLAY ROAD, AUSTIN, TX

LOCATION.--Lat 30°11'21", long 97°43'56", Travis County, Hydrologic Unit 12090205, at Jimmy Clay Road, 0.5 mi southeast of the intersection of Jimmy Clay and Nuckles Crossing Roads, and 5.9 mi south of the State Capitol in Austin.

DRAINAGE AREA.--27.6 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1974 to September 1975 (periodic discharge measurements only), September 1975 to September 1986 (converted to low-flow partial-record station).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 493.88 ft above National Geodetic Vertical Datum of 1929 (city of Austin bench mark). Prior to Oct. 1, 1982, at datum 3.30 ft higher.

REMARKS.--Estimated daily discharges: Nov. 11-14. Records good except for period of estimated daily discharges, which are fair. No known regulation or diversion. There are three recording rain gages located in the watershed above station. This station is part of a hydrologic research project to to study the rainfall-runoff relationships for the Austin urban-rural areas.

AVERAGE DISCHARGE.--11 years, 9.51 ft³/s (4.68 in/yr), 6,890 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft³/s June 11, 1981 (gage height, 20.55 ft), present datum; no flow Aug. 16, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--The maximum flood since 1869 occurred on Sept. 9 or 10, 1921 (stage and discharge not determined).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 15	0100	2,550	12.62	May 9	2315	*2,670	a*12.78
Oct. 19	1345	1,430	10.82	May 15	0900	1,210	10.28
Nov. 24	1015	561	8.16	May 17	1615	966	9.61
Nov. 27	0645	607	8.34	Sept. 6	0245	507	8.01
May 1	0045	595	8.28	Sept. 6	0945	1,240	10.36
May 1	1100	1,060	9.90				

a From floodmark.

Minimum daily discharge, 0.01 ft³/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	9.1	18	11	9.7	12	11	231	10	.56	.25	.97
2	6.2	38	15	11	9.4	12	10	12	6.0	.53	.22	.33
3	6.2	12	13	10	30	12	11	4.4	4.5	.46	.19	.29
4	6.3	9.5	13	11	25	12	11	3.2	12	.46	.23	.30
5	6.7	8.7	12	11	14	12	11	3.7	5.3	.37	.41	.30
6	6.6	10	11	10	12	12	11	3.6	2.4	.36	.12	280
7	7.0	12	12	10	10	12	5.7	2.9	3.6	.43	.14	7.1
8	6.9	11	12	14	12	12	5.4	3.0	7.5	.37	.19	2.3
9	6.9	11	12	13	13	12	12	267	7.3	.41	.20	1.9
10	7.2	12	24	11	11	12	13	377	4.0	.34	.19	2.4
11	6.9	12	46	9.7	9.3	12	12	14	33	.33	.24	1.2
12	6.6	12	16	8.9	9.1	13	12	5.0	5.1	.32	.12	1.1
13	6.0	12	13	8.6	9.0	11	11	3.4	2.2	.31	.11	1.3
14	46	12	13	8.5	9.0	11	11	1.6	1.6	.29	.10	1.9
15	293	12	12	9.0	9.3	12	10	235	1.4	.29	.09	.93
16	15	14	12	9.0	9.3	13	10	22	1.2	.40	.10	.74
17	21	14	12	8.2	9.4	13	10	221	19	.50	.09	.65
18	15	12	12	9.0	8.8	14	11	39	3.3	.54	.07	.69
19	273	15	11	8.8	8.9	13	11	14	2.1	.54	.04	.80
20	34	29	11	8.8	8.9	12	10	6.7	1.4	.55	.02	.76
21	21	12	9.9	8.7	8.5	12	10	3.7	1.6	.54	.01	.70
22	17	9.7	12	8.9	9.0	11	4.0	2.7	1.4	.51	.33	1.8
23	11	11	12	8.6	8.9	11	3.0	2.4	1.1	.48	.41	.71
24	9.5	117	11	8.4	9.0	11	2.9	2.1	1.1	.48	2.3	.41
25	8.5	56	10	9.3	11	11	3.2	2.3	.92	.45	.55	.58
26	8.5	20	11	9.1	12	11	3.4	2.9	.85	.37	.31	.44
27	8.2	282	11	8.8	12	11	3.5	2.7	.78	.36	.33	.33
28	8.3	52	11	8.8	11	11	3.4	1.9	.72	.33	.29	.34
29	10	31	11	9.1	---	10	3.3	1.9	.67	.32	.29	.37
30	10	24	11	9.1	---	10	26	3.4	.62	.29	.25	.36
31	8.7	---	11	9.2	---	11	---	8.1	---	.26	.23	---
TOTAL	903.8	892.0	420.9	298.5	318.5	364	271.8	1503.6	142.66	12.75	8.42	312.00
MEAN	29.2	29.7	13.6	9.63	11.4	11.7	9.06	48.5	4.76	.41	.27	10.4
MAX	293	282	46	14	30	14	26	377	33	.56	2.3	280
MIN	6.0	8.7	9.9	8.2	8.5	10	2.9	1.6	.62	.26	.01	.29
CFSM	1.06	1.08	.49	.35	.41	.42	.33	1.76	.17	.01	.01	.38
IN.	1.22	1.20	.57	.40	.43	.49	.37	2.03	.19	.02	.01	.42
AC-FT	1790	1770	835	592	632	722	539	2980	283	25	17	619

CAL YR 1985	TOTAL 5305.18	MEAN 14.5	MAX 338	MIN .23	CFSM .53	IN. 7.15	AC-FT 10520
WTR YR 1986	TOTAL 5448.93	MEAN 14.9	MAX 377	MIN .01	CFSM .54	IN. 7.34	AC-FT 10810

08158970 WILLIAMSON CREEK AT JIMMY CLAY ROAD, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1975 to current year. Pesticide analyses: January 1975 to September 1986. Radiochemical analyses: January 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN												
29...	0730	7.7	715	7.60	17.0	7	2.9	7.5	80	1.4	>110	K52
APR												
09...	1110	11	655	7.00	22.5	10	2.1	9.2	107	1.4	100	190
JUN												
11...	1215	106	200	7.80	24.0	50	550	7.6	92	6.6	66000	74000
11...	1400	77	238	7.70	25.0	50	190	7.4	91	4.8	K100000	66000
23...	1130	1.0	632	7.60	25.5	5	1.4	7.1	88	0.4	580	380
AUG												
21...	0840	0.01	883	7.70	25.0	5	--	5.8	72	0.4	680	1600
SEP												
06...	1220	405	115	7.30	24.0	160	550	--	--	2.7	200000	150000

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
JAN												
29...	200	92	54	15	61	2	8.9	105	85	74	0.7	10
APR												
09...	140	76	34	14	65	2	11	67	63	72	0.9	10
JUN												
11...	85	15	30	2.4	5.3	0.3	2.4	70	12	7.6	0.3	5.4
11...	99	14	35	2.7	7.5	0.3	3.2	85	15	11	0.2	5.6
23...	280	43	93	11	27	0.7	3.2	235	36	36	0.3	11
AUG												
21...	320	30	98	18	51	1	4.1	289	40	71	0.4	12
SEP												
06...	52	4	19	1.1	2.4	0.2	2.6	48	10	3.1	0.2	4.9

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN												
29...	370	2	1	16.9	0.08	17.0	0.25	1.5	1.8	6.70	6.0	2
APR												
09...	310	6	3	16.0	0.04	16.0	0.09	1.6	1.7	9.00	10	--
JUN												
11...	110	1190	125	0.38	0.02	0.40	0.07	0.93	1.0	0.63	30	2
11...	130	388	56	0.36	0.04	0.40	0.06	4.1	4.2	0.31	13	1
23...	360	3	2	0.87	0.03	0.90	0.05	0.35	0.4	0.18	2.7	--
AUG												
21...	470	--	--	--	<0.01	1.40	0.04	0.36	0.4	0.28	5.7	--
SEP												
06...	72	1210	96	0.41	0.09	0.50	0.10	0.6	0.7	0.50	9.8	2

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN											
29...	40	<1	<10	<1	160	<1	45	<0.1	<1	<1	72
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
JUN											
11...	32	<1	<10	<1	84	<1	<1	<0.1	<1	<1	4
11...	37	<1	<10	1	53	<1	2	<0.1	<1	<1	8
23...	--	--	--	--	--	--	--	--	--	--	--
AUG											
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
06...	15	<1	<10	2	54	<5	10	<0.1	<1	<1	6

08159000 ONION CREEK AT U.S. HIGHWAY 183 NEAR AUSTIN, TX

LOCATION.--Lat 30°10'40", long 97°41'18", Travis County, Hydrologic Unit 12090205, on right bank at downstream side of downstream bridge on U.S. Highway 183, 2.4 mi downstream from Williamson Creek, 3.2 mi southwest of Del Valle, and 7.5 mi southeast of the State Capitol Building in Austin.

DRAINAGE AREA.--321 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to March 1930, March 1976 to current year. In 1924-30 station was published as "near Del Valle."

GAGE.--Water-stage recorder. Datum of gage is 442.85 ft State Department of Highways and Public Transportation datum. May 15, 1924, to Mar. 15, 1930, nonrecording gage at highway bridge 1,700 ft upstream at 6.42-foot higher datum.

REMARKS.--Estimated daily discharges: Nov. 24-27, and May 4-13. Records fair except for estimated daily discharges, which are poor. Flow is slightly regulated by several small ponds on main channel and tributaries above station. There are eleven recording rain gages located in the watershed.

AVERAGE DISCHARGE.--15 years (water years 1925-29, 1977-86), 79.2 ft³/s (3.35 in/yr), 57,380 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,000 ft³/s May 28, 1929 (gage height, 30.5 ft), present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1869 occurred about July 3, 1869, stage about 38 ft from newspaper accounts, and Sept. 9, 1921, stage 38.0 ft, from floodmark, present site and datum.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 15	0215	3,800	a11.98	May 10	1200	*7,680	a*17.89
Oct. 19	1500	2,810	10.47	May 18	0545	2,850	11.56
Nov. 24	1300	3,870	a12.1	Sept. 6	1200	4,340	14.42
Nov. 27	1545	3,960	12.23				

a From floodmark.

Minimum discharge, no flow on several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	13	354	73	21	24	15	536	99	34	.00	2.6
2	8.1	58	267	72	20	24	15	43	84	28	.00	3.4
3	7.0	23	234	70	47	23	15	12	69	24	.00	.33
4	6.5	17	220	67	369	32	16	8.7	81	20	.00	.00
5	5.9	15	194	58	140	29	16	7.2	89	17	.00	.00
6	5.4	14	172	54	98	22	14	5.8	67	15	.00	1190
7	5.7	15	160	51	82	21	14	4.9	55	14	.00	41
8	6.1	15	149	55	75	20	12	4.5	87	13	.00	11
9	6.3	15	137	59	70	20	14	4.1	111	11	.00	7.0
10	6.6	15	141	60	69	20	17	2560	95	11	.00	7.0
11	6.8	39	705	56	69	19	17	384	171	9.6	.00	5.2
12	6.6	64	509	50	67	20	16	168	148	8.6	.00	5.2
13	6.0	26	289	46	64	18	16	91	586	8.1	.00	11
14	5.9	19	237	41	63	17	15	66	155	7.7	.00	19
15	641	15	215	39	61	19	15	421	107	7.2	.00	13
16	36	15	201	22	57	19	14	103	89	7.2	.00	9.5
17	27	18	187	13	55	19	14	646	682	7.2	.00	7.8
18	29	16	169	26	50	20	14	1070	204	6.1	.00	6.7
19	623	15	157	34	47	18	14	282	189	5.4	.00	5.8
20	166	40	146	29	42	16	14	185	137	5.0	.00	5.7
21	65	18	138	27	35	16	14	139	110	4.6	.00	6.0
22	46	15	132	24	32	15	10	109	96	4.4	.00	8.8
23	24	14	125	21	32	15	6.8	91	87	3.7	.00	26
24	17	1300	115	19	31	15	6.8	76	70	3.7	.08	14
25	15	554	106	19	31	15	6.8	70	62	3.7	4.1	8.5
26	15	244	98	20	31	16	6.8	66	55	3.5	1.3	6.9
27	14	1970	97	20	29	16	6.6	88	50	2.8	.19	5.5
28	13	1260	93	20	25	16	5.8	80	45	1.9	.00	5.3
29	13	653	87	20	---	15	5.8	60	38	.17	.00	4.1
30	14	445	81	21	---	15	11	60	36	.01	.00	4.1
31	14	---	76	22	---	15	---	77	---	.00	.00	---
TOTAL	1864.6	6940	5991	1208	1812	589	377.4	7526.2	3954	287.58	5.67	1440.43
MEAN	60.1	231	193	39.0	64.7	19.0	12.6	243	132	9.28	.18	48.0
MAX	641	1970	705	73	369	32	17	2560	682	34	4.1	1190
MIN	5.4	13	76	13	20	15	5.8	4.1	36	.00	.00	.00
CFSM	.19	.72	.60	.12	.20	.06	.04	.76	.41	.03	.00	.15
IN.	.22	.80	.69	.14	.21	.07	.04	.87	.46	.03	.00	.17
AC-FT	3700	13770	11880	2400	3590	1170	749	14930	7840	570	11	2860

CAL YR 1985 TOTAL 47494.26 MEAN 130 MAX 3930 MIN .00 CFSM .40 IN. 5.50 AC-FT 94200
WTR YR 1986 TOTAL 31995.88 MEAN 87.7 MAX 2560 MIN .00 CFSM .27 IN. 3.71 AC-FT 63460

08159000 ONION CREEK AT U.S. HIGHWAY 183 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1976 to current year. Pesticide analyses: October 1976 to September 1986. Sediment analyses: October 1976 to September 1982. Radiochemical analyses: January 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN												
29...	0815	7.2	617	8.80	12.5	10	2.2	10.1	96	1.2	56	47
APR												
09...	1025	16	639	8.00	22.0	10	0.7	9.5	109	0.7	56	4600
MAY												
10...	1335	3760	190	7.80	--	140	200	--	--	5.6	25000	100000
JUN												
17...	1030	1230	242	7.90	25.0	60	130	8.1	100	3.2	22000	29000
18...	0655	197	232	7.80	24.5	60	37	8.2	100	1.6	8800	K4400
24...	0900	63	440	7.80	28.0	3	2.5	6.9	--	0.4	K80	140
SEP												
06...	1140	4360	159	7.80	24.0	--	820	--	--	5.0	84000	100000

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
JAN												
29...	230	65	69	15	41	1	4.4	169	57	45	0.4	4.7
APR												
09...	190	59	54	14	53	2	7.1	134	65	61	0.6	11
MAY												
10...	89	12	29	4.0	3.5	0.2	3.4	77	13	4.5	0.1	8.7
JUN												
17...	110	18	37	5.1	4.4	0.2	3.4	95	15	6.5	0.1	10
18...	100	5	34	4.2	5.5	0.2	3.3	97	15	6.3	0.1	10
24...	210	23	64	13	10	0.3	1.9	190	22	14	0.2	9.8
SEP												
06...	66	9	23	2.1	5.7	0.3	4.0	57	17	5.7	0.2	7.9

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
JAN												
29...	340	4	3	6.45	0.05	6.50	0.04	0.86	0.9	2.60	3.0	1
APR												
09...	350	4	4	9.66	0.14	9.80	0.02	0.78	0.8	4.80	10	--
MAY												
10...	110	920	148	0.46	0.04	0.50	0.08	3.0	3.1	0.28	34	<1
JUN												
17...	140	333	57	0.37	0.03	0.40	0.04	0.86	0.9	0.30	17	2
18...	140	43	12	0.38	0.02	0.40	0.07	0.63	0.7	0.11	8.3	1
24...	250	31	11	--	<0.01	0.30	0.03	0.27	0.3	0.03	2.6	--
SEP												
06...	100	--	--	0.60	0.10	0.70	0.12	1.2	1.3	0.52	52	2

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN											
29...	43	<1	<10	<1	15	<1	5	<0.1	<1	<1	24
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
MAY											
10...	17	<1	<10	4	30	1	2	<0.1	<1	<1	3
JUN											
17...	23	<1	<10	2	9	<5	1	<0.1	<1	<1	5
18...	23	<1	<10	2	1	<5	2	<0.1	<1	<1	5
24...	--	--	--	--	--	--	--	--	--	--	--
SEP											
06...	21	<1	<10	<1	3	<5	6	0.1	<1	<1	4

08159200 COLORADO RIVER AT BASTROP, TX

LOCATION.--Lat 30°06'20", long 97°19'08", Bastrop County, Hydrologic Unit 12090301, on left bank in city park at Bastrop, 400 ft upstream from bridge on State Highway 71, 0.3 mi upstream from Gills Creek, 1.1 mi downstream from Piney Creek, and at mile 236.7.

DRAINAGE AREA.--39,979 mi², approximately, of which 11,403 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1960 to September 1973, October 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 307.38 ft above National Geodetic Vertical Datum of 1929. Prior to May 10, 1960, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Aug. 18-22. Records good. There are many diversions above station for irrigation and for municipal supply. Regulation is the same as that for Colorado River at Austin (station 08158000). The city of Austin diverts water into Decker Lake (by pumpage) upstream from this station. The Lower Colorado River Authority also diverts water from the Colorado into Lake Bastrop by pumping upstream from this station. Gage-height telemeter is located at station.

AVERAGE DISCHARGE.--26 years, 2,053 ft³/s (1,487,000 acre-ft yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,600 ft³/s Oct. 29, 1960 (gage height, 34.45 ft); minimum daily, 75 ft³/s Apr. 1, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1845, 60.3 ft July 7 or 8, 1869. Flood of June 16, 1935, reached a stage of 57.0 ft, and flood of Dec. 4, 1913, reached a stage of 53.3 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,200 ft³/s Nov. 25 at 0600 hours (gage height, 16.16 ft); minimum daily, 184 ft³/s Oct. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1190	262	1250	1410	323	311	422	2630	1980	2100	1490	1530
2	757	251	1180	1410	319	299	688	3840	2160	2080	1500	1680
3	567	246	858	1480	348	1140	845	2340	2020	1810	1660	1660
4	496	334	803	1390	1580	2490	969	2270	1860	1770	1390	1680
5	501	368	726	1130	1570	1540	1640	2140	2000	1900	1290	1560
6	399	439	672	1280	849	948	1800	2140	1840	1950	1690	5890
7	371	279	571	1340	714	557	1830	2050	1810	1980	1580	10200
8	456	276	589	1300	610	610	1690	2010	2000	1980	1530	1370
9	381	400	588	1470	481	454	1550	2000	3090	1940	1510	1130
10	360	327	568	1600	450	335	1650	5670	3580	1920	1560	1650
11	248	285	1120	1090	450	1210	1610	9010	3510	1930	1590	1650
12	184	489	2960	888	430	1580	1620	2900	4130	1910	1660	2180
13	643	398	1510	905	347	1870	1520	2430	3850	1660	1730	1810
14	617	307	1100	982	304	1620	1470	2190	4710	1640	1570	1730
15	3570	267	1200	918	384	1000	1430	3420	5400	1630	1620	1630
16	2700	255	884	1030	398	1000	1460	4580	5200	1560	1700	1430
17	1060	264	783	833	386	785	1460	2440	6990	1510	1720	1450
18	846	325	992	562	378	579	1620	8090	6520	1490	1680	1530
19	1320	287	969	422	379	447	1640	4230	5640	1490	1770	1780
20	4360	289	977	481	360	573	1560	2640	5460	1470	1700	1690
21	1410	334	741	3370	342	854	1560	2240	4550	1410	1700	1460
22	851	337	650	3670	616	536	1500	2180	3690	1350	2160	1540
23	649	290	603	2000	533	406	1730	2010	3570	1310	1840	1520
24	450	2630	550	1010	567	439	1750	1960	3530	1370	1690	1510
25	363	14500	538	1260	545	413	1750	2510	3480	1330	1620	1450
26	322	2930	948	662	536	288	2000	2410	3450	1430	1540	1430
27	285	6370	1150	526	518	358	2500	1890	3430	1450	1680	1440
28	219	10600	1400	382	394	507	2160	1890	3390	1410	1700	1440
29	268	2610	1430	353	---	512	2040	1830	3380	1440	1690	1440
30	278	1560	1440	335	---	494	2190	1990	2980	1460	1540	1410
31	247	---	1410	320	---	481	---	2020	---	1490	1500	---
TOTAL	26368	48509	31160	35809	15111	24636	47654	91950	109200	51170	50600	59870
MEAN	851	1617	1005	1155	540	795	1588	2966	3640	1651	1632	1996
MAX	4360	14500	2960	3670	1580	2490	2500	9010	6990	2100	2160	10200
MIN	184	246	538	320	304	288	422	1830	1810	1310	1290	1130
AC-FT	52300	96220	61810	71030	29970	48870	94520	182400	216600	101500	100400	118800

CAL YR 1985 TOTAL 572915 MEAN 1570 MAX 14500 MIN 184 AC-FT 1136000
WTR YR 1986 TOTAL 592037 MEAN 1622 MAX 14500 MIN 184 AC-FT 1174000

08159200 COLORADO RIVER AT BASTROP, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1944. Chemical and biochemical analyses: February 1968 to August 1973, October 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3
OCT 08...	1045	634	583	8.30	22.0	8.8	101	0.8	210	45
DEC 11...	1230	634	615	7.70	14.5	9.0	88	0.9	250	56
MAR 25...	1128	405	608	8.10	19.5	10.0	110	0.6	230	53
MAY 02...	0925	4240	450	7.20	21.5	6.0	68	6.0	160	32
JUL 16...	1145	974	519	7.70	28.0	7.7	--	0.4	200	43
AUG 26...	0935	1060	496	7.70	28.0	7.5	--	0.1	200	41

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 08...	55	18	34	1	4.3	166	38	55	0.5
DEC 11...	72	16	31	0.9	4.2	190	53	42	0.5
MAR 25...	58	20	38	1	4.3	174	51	53	0.5
MAY 02...	41	14	22	0.8	4.0	128	30	42	0.3
JUL 16...	49	19	24	0.8	3.2	158	33	43	0.3
AUG 26...	48	19	25	0.8	3.7	157	30	41	0.3

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT 08...	5.2	310	0.99	0.01	1.00	0.05	0.45	0.5	0.46
DEC 11...	10	340	2.24	0.06	2.30	0.07	0.63	0.7	0.51
MAR 25...	3.3	330	1.65	0.04	1.70	0.04	0.56	0.6	0.73
MAY 02...	6.7	240	1.14	0.06	1.20	0.14	0.76	0.9	0.61
JUL 16...	7.1	270	0.69	0.01	0.70	0.03	0.37	0.4	0.25
AUG 26...	7.9	270	--	<0.01	0.80	0.08	0.22	0.3	0.32

08160800 REDGATE CREEK NEAR COLUMBUS, TX

LOCATION.--Lat 29°47'56", long 96°31'55", Colorado County, Hydrologic Unit 12090301, on left bank at downstream side of bridge on Farm Road 109, 1.9 mi upstream from Cummins Creek, and 7.0 mi north of Columbus.

DRAINAGE AREA.--17.3 mi².

PERIOD OF RECORD.--April 1962 to current year.

REVISED RECORDS.--WSP 2122: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 210.82 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1975, at datum 10.00 ft higher.

REMARKS.--Estimated daily discharges: Oct. 1-17, 27-31, Nov. 1-8, 20, 21, Dec. 4, 5, 19, 20, Feb. 13, 14, 18-21, 24-28, Mar. 1-2, 7-31, Apr. 1-25, 30, May 1 to June 10, July 17 to Aug. 5 and Sept. 15-30. Records fair except for estimated daily discharges, which are poor. No known diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--24 years, 5.53 ft³/s (4.34 in/yr), 4,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,360 ft³/s May 22, 1979, gage height, 27.19 ft, from rating curve extended above 2,170 ft³/s on basis of slope-area measurement of peak flow of Jan. 22, 1965; no flow for many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, about 33.4 ft in late June or early July 1940, from information by State Department of Highways and Public Transportation and local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 11	2145	*2,100	*19.50	Nov. 24	0900	1,140	16.88

Minimum discharge, 0.05 ft³/s Oct. 11-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.45	32	1.5	1.5	.90	.72	25	7.0	.68	.10	.36
2	.12	2.5	2.5	1.5	1.5	.90	.71	5.0	2.5	.68	.10	.43
3	.10	.90	2.0	1.5	4.3	7.7	.70	2.5	2.0	.68	.10	.46
4	.09	.75	1.8	1.5	6.9	4.0	.69	2.0	3.0	.68	.30	.50
5	.08	.70	1.6	1.5	14	1.7	.68	1.5	20	.67	.27	.26
6	.07	.65	1.5	1.5	4.5	1.0	.67	1.2	10	.59	.19	1.6
7	.07	.62	1.5	1.5	1.8	.95	.66	1.1	5.0	.59	.15	4.1
8	.06	.60	1.5	1.5	1.6	.90	.65	1.0	100	.59	.09	1.3
9	.06	.59	1.5	2.0	1.2	.87	.65	.90	30	.59	.08	.83
10	.06	.63	1.7	3.1	1.2	.85	1.4	3.0	15	.57	.07	.68
11	.05	180	14	1.8	1.2	.85	1.2	10	13	.46	.08	.52
12	.05	33	6.2	1.6	1.2	2.0	1.0	4.0	9.8	.43	.26	13
13	.05	4.2	3.8	1.4	1.1	1.4	.90	2.0	6.3	.36	.16	47
14	.20	3.0	2.1	1.4	1.1	1.2	.80	3.0	11	.33	.11	14
15	2.0	3.6	1.9	1.4	1.0	1.1	.75	5.0	5.1	.30	.10	4.9
16	1.0	1.9	1.8	1.4	1.2	1.0	.70	3.0	3.3	.27	.19	3.0
17	.65	1.8	1.8	1.9	1.2	.90	.66	10	2.4	.25	.16	2.3
18	.59	1.6	1.8	2.0	1.1	.88	.63	7.0	2.8	.23	.11	1.8
19	.59	1.4	1.7	1.6	1.1	.86	.68	3.0	1.8	.21	.06	2.0
20	.58	1.2	1.7	1.6	1.0	.86	.82	2.0	1.6	.20	.23	1.4
21	.59	1.1	1.6	1.5	1.0	.84	.93	1.6	1.6	.18	.10	1.7
22	1.2	1.0	1.6	1.4	.99	.84	.72	1.4	1.4	.17	.09	2.3
23	1.7	1.1	1.6	1.4	.99	.82	.59	1.3	1.3	.16	3.0	3.0
24	.64	198	1.6	1.4	.95	.82	.57	1.2	1.5	.15	1.4	2.2
25	.54	9.2	1.5	1.4	.95	.80	.55	1.5	1.1	.14	.45	2.0
26	.50	2.7	1.5	1.4	.95	.78	.54	1.4	1.1	.13	.47	1.7
27	.48	71	1.5	1.4	.92	.77	.54	1.2	1.0	.12	.36	1.8
28	.47	6.4	1.5	1.3	.92	.76	.54	1.2	.82	.12	1.2	2.3
29	.46	2.5	1.5	1.3	---	.75	.54	1.1	.74	.11	1.4	2.0
30	.46	1.7	1.5	1.3	---	.74	.54	10	.67	.11	.68	1.3
31	.45	---	1.5	1.4	---	.73	---	20	---	.10	.36	---
TOTAL	14.11	534.79	101.3	48.4	57.37	39.47	21.73	134.10	262.83	10.85	12.42	120.74
MEAN	.46	17.8	3.27	1.56	2.05	1.27	.72	4.33	8.76	.35	.40	4.02
MAX	2.0	198	32	3.1	14	7.7	1.4	25	100	.68	3.0	47
MIN	.05	.45	1.5	1.3	.92	.73	.54	.90	.67	.10	.06	.26
CFSM	.03	1.03	.19	.09	.12	.07	.04	.25	.51	.02	.02	.23
IN.	.03	1.15	.22	.10	.12	.08	.05	.29	.57	.02	.03	.26
AC-FT	28	1060	201	96	114	78	43	266	521	22	25	239

CAL YR 1985 TOTAL 1397.03 MEAN 3.83 MAX 198 MIN .00 CFSM .22 IN. 3.00 AC-FT 2770
WTR YR 1986 TOTAL 1358.11 MEAN 3.72 MAX 198 MIN .05 CFSM .22 IN. 2.92 AC-FT 2690

08161000 COLORADO RIVER AT COLUMBUS, TX

LOCATION.--Lat 29°42'22", long 96°32'12", Colorado County, Hydrologic Unit 12090302, near right bank at downstream side of pier of bridge on U.S. Highway 90 at eastern edge of Columbus, 340 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.6 mi downstream from Cummins Creek, and at mile 135.1.

DRAINAGE AREA.--41,640 mi², approximately, of which 11,403 mi² probably is noncontributing; 41,730 mi², approximately, at site "near Eagle Lake".

PERIOD OF REORD.--January 1903 to December 1911 (gage heights only), May 1916 to current year. Discharge records for 1902-11, published in WSP 84, 99, 132, 174, 210, 288, and 308, have been found to be unreliable and should not be used. Records collected at site 23 mi downstream October 1930 to May 1939, published as "near Eagle Lake". Gage-height records collected in this vicinity since 1903 are contained in reports of the National Weather Service.

Water-quality records.--Chemical analyses: October 1967 to September 1971. Chemical and biochemical analyses: February 1968 to September 1981.

REVISED RECORDS.--WSP 1512: 1920-21(M), 1922. WDR TX-81-3: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 155.52 ft above National Geodetic Vertical Datum of 1929. Prior to May 1, 1919, various nonrecording gages at sites in the immediate vicinity at datum 3.00-foot lower. May 1, 1919, Nov. 23, 1930, water-stage recorder at site about 300 ft downstream at datum 3.00-foot lower. Sept. 17, 1930, to June 12, 1939 (Oct. 1, 1930, to May 31, 1939, used herein), water-stage recorder at site 23 mi downstream at different datum. May 17 to Nov. 14, 1939, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Oct. 6-15, 27-31, Nov. 1-11, 13-23, Dec. 25-27, Jan. 29-31, and Feb. 1-4, 8-11. Records good except those for estimated daily discharges, which are fair. At times, low-flow releases from Lake Travis (station 08154500) are made for generation of electric power and (or) to fulfill downstream water contracts. The Lower Colorado River Authority reported that 14,490 acre-ft was diverted from the river to Cedar Creek Reservoi during the current year. This reservoir is located 10 mi north of the river and 3.5 mi west of Fayettville. Flow is also affected at times by discharge from flood-detention pools of 20 floodwater-retarding structures with a combined detention capacity of 25,570 acre-ft. These structures control runoff from 73.1 mi² in the Cummins Creek watershed. There are many other diversions above station for irrigation and municipal supply. Gage-height telemeter at station.

AVERAGE DISCHARGE.--20 years (water years 1917-36) unregulated, 3,809 ft³/s (2,760,000 acre-ft/yr); 50 years (water years 1937-86) regulated, 2,837 ft³/s (2,055,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 190,000 ft³/s June 18, 1935 (gage height, 38.5 ft), present site and datum, computed on basis of records for station near Eagle Lake; minimum, 93 ft³/s Sept. 1, 1918.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 41.6 ft, present datum, in July 1869 and Dec. 6, 1913, from information by local resident. River divided each time and left Columbus on an island.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,100 ft³/s Nov. 26 at 2300 hours (gage height, 18.47 ft); minimum daily, 400 ft³/s Oct. 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1710	580	4300	1460	750	585	533	1770	4940	3580	1590	1450
2	1630	570	3070	1440	700	586	522	2820	3720	2780	1600	1460
3	1450	560	2460	1430	700	506	507	3530	2770	2430	1590	1480
4	1180	550	2080	1430	1900	1130	556	3200	3290	2320	1610	1540
5	1030	530	1730	1470	3730	3780	718	2300	2690	2080	1850	1580
6	880	510	1560	1390	3880	2510	850	2170	2740	2040	1510	1580
7	750	500	1440	1230	1860	1480	1430	2020	2950	2120	1470	1820
8	640	520	1340	1320	1300	1090	1690	1960	6200	2170	1650	9780
9	560	560	1220	1400	1000	906	1630	1940	6180	2200	1570	5220
10	500	600	1150	1460	900	734	1610	2570	4570	2160	1530	1740
11	460	800	1310	1510	930	739	1560	4090	4770	2110	1520	1490
12	430	3630	1820	1560	806	614	1610	9420	4840	2080	1570	2840
13	400	800	3130	1250	736	875	1620	5350	5190	2070	1570	5910
14	400	700	3280	1070	701	1370	1600	3030	4720	2030	1630	3470
15	7700	650	1940	1070	650	1470	1510	2580	4710	1830	1610	2310
16	1340	700	1590	1090	607	1400	1450	3160	5380	1800	1540	1890
17	3640	800	1550	1490	572	1060	1450	5680	5650	1790	1550	1770
18	2000	750	1340	3520	538	972	1460	10300	7510	1720	1630	1580
19	1380	700	1220	2190	540	853	1480	11200	7450	1690	1600	1520
20	1190	660	1280	1310	537	701	1480	8130	6360	1660	1550	1550
21	2680	620	1280	994	519	640	1480	4320	6080	1660	1410	1730
22	4360	600	1270	1230	501	550	1470	3300	5620	1630	1530	1680
23	4130	700	1130	3270	486	792	1460	2820	4470	1570	1720	1540
24	2090	930	1020	3200	515	676	1440	2710	4020	1530	1760	1510
25	1270	22300	955	1710	640	607	1440	2490	3920	1490	1760	1520
26	966	24400	900	1360	627	525	1470	2560	3820	1520	1580	1520
27	750	21300	860	1310	623	543	1480	3570	3770	1490	1490	1440
28	680	10100	1030	1100	606	515	1690	2640	3720	1550	1480	1420
29	640	17400	1280	950	---	433	1750	2300	3670	1570	1540	1420
30	620	8620	1460	850	---	460	1750	2240	3640	1570	1550	1400
31	600	---	1510	800	---	534	---	2380	---	1570	1540	---
TOTAL	48056	123140	51505	46864	27854	29636	40696	118550	139360	59810	49100	67160
MEAN	1550	4105	1661	1512	995	956	1357	3824	4645	1929	1584	2239
MAX	7700	24400	4300	3520	3880	3780	1750	11200	7510	3580	1850	9780
MIN	400	500	860	800	486	433	507	1770	2690	1490	1410	1400
AC-FT	95320	244200	102200	92950	55250	58780	80720	235100	276400	118600	97390	133200

CAL YR 1985 TOTAL 769352 MEAN 2108 MAX 24400 MIN 400 AC-FT 1526000
WTR YR 1986 TOTAL 801731 MEAN 2197 MAX 24400 MIN 400 AC-FT 1590000

08162000 COLORADO RIVER AT WHARTON, TX
(National stream-quality accounting and radiochemical network)

LOCATION.--Lat 29°18'32", long 96°06'13", Wharton County, Hydrologic Unit 12090302, near left bank at downstream side of downstream bridge on U.S. Highway 59 in Wharton, 1,100 ft downstream from Texas and New Orleans Railroad Co. bridge, 12 mi upstream from Jones Creek, and at mile 66.6.

DRAINAGE AREA.--42,003 mi^2 , approximately, of which 11,403 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1916 to August 1918 (intermittent periods), March 1919 to September 1925, July and August 1938 (flood discharge measurements only), October 1938 to current year. June to November 1901 and May to September 1902, daily records published in U.S. Department of Agriculture, Office of Experiment Stations, Bulletin Nos. 119 and 133. Gage-height records collected in this vicinity since 1935 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 878: 1938(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 52.42 ft (revised) above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1938, various types of recording and nonrecording gages 800 ft upstream at different datum. Oct. 1, 1938, to June 1, 1966, nonrecording gage 100 ft upstream at datum 13.00 ft higher. June 1, 1956, to Sept. 30, 1975, water-stage recorder at present site at datum 13 ft higher. Oct. 1, 1975, to Mar. 1, 1983, water-stage recorder at present site at datum 10 ft higher.

REMARKS.--No estimated daily discharges. Records good. There are many diversions above station for irrigation, municipal supply, cooling water for thermal-electric powerplant, and oilfield operations. For statement regarding upstream regulation, see station 08161000. Gage-height telemeter at station.

AVERAGE DISCHARGE.--5 years (water years 1920-25) unregulated, 3,680 ft^3/s (2,666,000 acre-ft/yr); 48 years (water years 1939-86) regulated, 2,618 ft^3/s (1,897,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 100,000 ft^3/s July 3, 1940 (gage height, 38.99 ft); no flow Aug. 6, 1925 (result of pumping).

Flood of July 30, 1938, reached a stage of 50.4 ft (revised), present datum, observed by Geolgical Survey engineers (discharge, 145,000 ft^3/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1869, 51.9 ft (revised) Dec. 8, 1913, present datum, from information by local residents; below Wharton floodwater combined with that of the Brazos River. Flood of about July 12, 1869, reached about same height. Flood of June 20, 1935, reached a stage of 51.2 ft (revised), present datum, furnished by National Weather Service (discharge, 159,000 ft^3/s), from rating curve defined by current-meter measurements below 145,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,400 ft^3/s Nov. 27 at 2300 hours (gage height, 29.94 ft); minimum daily, 381 ft^3/s Mar. 31 (result of regulation and pumping).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2610	664	8600	1680	828	736	403	967	2560	3070	922	1110
2	2080	646	4710	1630	770	727	451	1190	4470	2980	899	932
3	1780	633	3470	1510	734	725	477	2000	4060	2350	898	790
4	1670	632	2790	1480	728	733	493	2890	3070	1810	880	877
5	1300	627	2410	1470	1200	914	502	2880	3430	1680	905	922
6	1020	608	2050	1480	3520	3350	563	2050	3000	1440	1250	1030
7	872	581	1820	1460	3840	2740	665	1880	2930	1320	1410	1410
8	782	554	1620	1300	2330	1920	896	1680	3610	1390	1220	1820
9	729	590	1470	1330	1670	1400	1140	1530	8230	1490	1470	7970
10	621	627	1350	1390	1320	1220	993	1460	7840	1630	1350	5700
11	502	1580	1710	1430	1190	979	1090	1930	6140	1670	1280	2440
12	509	15100	1850	1530	1070	955	1290	3580	6590	1670	1320	1610
13	484	7750	2450	1590	976	874	1390	7540	6070	1680	1430	2450
14	449	3370	3330	1360	903	846	1340	4870	5910	1700	1470	5390
15	470	2130	3580	1130	861	1450	1260	2790	5530	1690	1450	3660
16	641	1700	2430	1090	822	1790	1140	2280	5420	1530	1390	2400
17	1040	1460	1960	1110	773	1660	1000	2480	5680	1420	1230	1760
18	3080	1290	1790	1270	750	1440	901	5440	5710	1410	1190	1410
19	2470	1250	1570	3080	718	1160	836	9400	6820	1380	1190	1160
20	1750	1080	1380	2460	719	996	839	10200	6880	1380	1000	961
21	1460	991	1360	1640	696	855	1010	7760	5950	1380	831	890
22	2440	915	1390	1200	690	733	1080	4460	5600	1330	749	1140
23	4450	837	1400	1080	683	668	1070	3130	5170	1200	795	1250
24	4330	935	1340	2850	671	727	920	2460	4130	1090	936	1210
25	2680	9050	1200	3190	662	828	709	2280	3600	1120	1180	1140
26	1680	16900	1120	2100	739	617	593	2050	3650	1120	1250	1120
27	1280	23500	1060	1470	737	518	682	2130	3600	1070	1300	1210
28	1060	18500	1030	1550	720	460	705	3080	3320	1010	1140	1240
29	913	11900	1080	1170	---	486	742	2680	3220	982	1170	1240
30	795	16000	1400	1070	---	443	887	2060	3200	991	1140	1230
31	719	---	1590	934	---	381	---	2130	---	960	1100	---
TOTAL	46666	142400	66310	49034	31320	33331	26067	103257	145390	46943	35745	57472
MEAN	1505	4747	2139	1582	1119	1075	869	3331	4846	1514	1153	1916
MAX	4450	23500	8600	3190	3840	3350	1390	10200	8230	3070	1470	7970
MIN	449	554	1030	934	662	381	403	967	2560	960	749	790
AC-FT	92560	282500	131500	97260	62120	66110	51700	204800	288400	93110	70900	114000

CAL YR 1985 TOTAL 759221 MEAN 2080 MAX 23500 MIN 449 AC-FT 1506000
WTR YR 1986 TOTAL 783935 MEAN 2148 MAX 23500 MIN 381 AC-FT 1555000

08162000 COLORADO RIVER AT WHARTON, TX--Continued
(National stream-quality accounting and radiochemical network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1944 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: October 1967 to June 1982. Sediment analyses: October 1974 to current year. Radiochemical analyses: December 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1944 to current year.
WATER TEMPERATURES: October 1945 to September 1948, March 1950 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 904 microsiemens Oct. 29, 1963; minimum daily, 139 microsiemens Nov. 12, 1985.
WATER TEMPERATURES: Maximum daily, 35.0°C July 26, 1954; minimum daily, 0.0°C Dec. 26, 1983.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 660 microsiemens Apr. 7; minimum daily, 139 microsiemens Nov. 12.
WATER TEMPERATURES: Maximum daily, 30.0°C on several days during July and August; minimum daily, 7.0°C Dec. 14, 15.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
DEC 10...	1220	1300	526	8.20	18.0	10	3.9	9.8	103	0.7	150
JAN 22...	1010	1220	410	8.10	16.5	80	80	8.6	87	1.6	130
MAR 12...	1445	965	544	8.00	23.0	10	16	8.4	98	1.2	72
APR 29...	1445	724	548	8.40	26.0	10	7.8	9.2	113	2.1	44
JUN 17...	1355	5720	449	8.20	29.0	10	100	8.6	--	1.0	170
AUG 13...	1000	1380	502	8.10	29.0	5	81	8.0	--	2.1	170

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC 10...	120	230	44	69	13	22	0.7	4.3	182	38	33
JAN 22...	200	160	35	44	11	23	0.8	4.7	120	31	35
MAR 12...	28	230	41	63	17	26	0.8	4.0	187	37	39
APR 29...	1600	200	25	52	18	30	0.9	3.8	179	39	45
JUN 17...	210	180	37	46	15	22	0.7	3.8	140	32	38
AUG 13...	620	190	35	47	18	27	0.9	3.9	157	33	44

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)
DEC 10...	0.3	14	315	310	45	15	0.99	--	0.01	<0.01	1.00
JAN 22...	0.2	7.4	240	230	106	17	0.59	--	0.01	<0.01	0.60
MAR 12...	0.3	8.3	316	310	19	1	0.78	0.81	0.02	0.01	0.80
APR 29...	0.3	6.8	317	320	26	6	0.59	0.56	0.01	0.01	0.60
JUN 17...	0.2	8.4	260	250	238	23	--	--	<0.01	<0.01	0.60
AUG 13...	0.3	8.7	276	280	--	15	0.58	0.64	0.02	0.01	0.60

08162000 COLORADO RIVER AT WHARTON, TX--Continued
(National stream-quality accounting and radiochemical network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)
DEC 10...	1.10	0.06	0.05	0.74	0.8	0.16	0.13	0.12	0.37	3.9	64
JAN 22...	0.64	0.06	0.03	0.54	0.6	0.17	0.08	0.08	0.25	6.3	103
MAR 12...	0.82	<0.01	<0.01	--	0.5	0.25	--	0.19	0.58	3.1	36
APR 29...	0.57	0.05	0.05	0.45	0.5	0.31	0.26	0.23	0.71	4.4	13
JUN 17...	0.62	0.01	0.02	0.69	0.7	0.26	0.15	0.15	0.46	6.9	703
AUG 13...	0.65	0.04	0.02	0.56	0.6	0.29	0.21	0.21	0.64	6.6	97

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)
DEC 10...	225	85	<10	2	110	<0.5	<1	<1	<3	1
JAN 22...	339	99	--	--	--	--	--	--	--	--
MAR 12...	94	97	<10	2	98	<0.5	<1	<1	<3	<1
APR 29...	25	97	--	--	--	--	--	--	--	--
JUN 17...	10900	23	--	--	--	--	--	--	--	--
AUG 13...	361	91	20	2	86	<0.5	<1	<1	<3	1

DATE	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)
DEC 10...	18	4	13	4	<0.1	<10	1	<1	<1	400
JAN 22...	--	--	--	--	--	--	--	--	--	--
MAR 12...	4	<1	16	4	<0.1	<10	1	1	<1	500
APR 29...	--	--	--	--	--	--	--	--	--	--
JUN 17...	--	--	--	--	--	--	--	--	--	--
AUG 13...	9	<5	14	2	<0.1	<10	1	<1	<1	410

DATE	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)	GROS ALPA, DISSOLED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
DEC 10...	<6	15	4	<0.6	4.2	<0.6	3.2	<0.6	0.1	1.1
JAN 22...	--	--	--	--	--	--	--	--	--	--
MAR 12...	<6	21	--	--	--	--	--	--	--	--
APR 29...	--	--	--	--	--	--	--	--	--	--
JUN 17...	--	--	--	--	--	--	--	--	--	--
AUG 13...	<6	11	-	--	--	--	--	--	--	--

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08162000 COLORADO RIVER AT WHARTON, TX--Continued
(National stream-quality accounting and radiochemical network)

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	46666	439	245	30800	37	4600	31	3960	170
NOV. 1985	142400	250	141	54200	20	7580	19	7180	98
DEC. 1985	66310	440	245	43900	37	6550	32	5640	170
JAN. 1986	49034	553	306	40500	47	6270	39	5120	210
FEB. 1986	31320	511	283	24000	43	3660	36	3050	190
MAR. 1986	33331	552	305	27500	47	4260	39	3470	210
APR. 1986	26067	580	320	22500	50	3520	40	2830	220
MAY 1986	103257	400	223	62200	33	9110	29	8080	150
JUNE 1986	145390	416	232	91100	34	13400	30	11800	160
JULY 1986	46943	518	288	36400	44	5550	37	4640	200
AUG. 1986	35745	518	287	27700	44	4220	37	3530	200
SEPT 1986	57472	408	228	35300	34	5200	29	4570	160
TOTAL	783935	**	**	496000	**	73900	**	63900	**
WTD.AVG.	2148	421	234	**	35	**	30	**	160

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	505	458	266	620	574	603	637	549	456	500	539	507
2	378	469	309	624	584	641	646	538	486	499	537	512
3	454	496	340	605	594	630	653	517	381	501	535	515
4	445	521	379	595	592	626	650	533	310	505	532	504
5	535	541	410	594	595	639	647	456	414	507	530	506
6	553	563	431	591	548	584	652	485	453	509	522	496
7	534	562	455	589	329	323	660	455	421	510	515	487
8	530	585	481	585	401	392	658	428	441	513	524	474
9	577	588	503	580	472	538	636	430	373	514	518	472
10	593	599	521	585	493	545	620	463	275	515	515	275
11	603	575	502	581	487	546	591	478	266	519	519	296
12	600	139	447	577	501	544	555	487	326	518	524	318
13	603	238	462	570	515	552	543	447	355	521	508	349
14	595	201	392	569	523	566	547	357	428	513	511	379
15	612	229	464	570	530	567	552	332	429	523	512	272
16	611	259	508	580	538	593	554	358	451	526	515	333
17	602	345	496	576	550	605	556	389	454	530	519	295
18	528	408	465	578	566	579	557	415	453	527	521	384
19	564	463	487	580	580	563	558	351	468	529	519	425
20	510	494	510	457	585	565	559	276	463	532	515	461
21	400	458	527	396	588	573	561	348	381	530	520	475
22	420	472	536	406	589	581	553	323	410	530	531	488
23	395	518	548	477	578	594	551	347	459	529	516	489
24	323	525	563	462	572	595	555	375	469	533	513	493
25	264	402	560	597	573	588	562	400	475	531	512	492
26	258	255	571	524	576	602	575	429	483	531	508	501
27	269	192	586	517	581	616	569	460	490	532	502	500
28	309	186	594	519	590	622	563	462	495	533	506	507
29	359	215	600	529	---	614	561	456	497	537	516	500
30	400	218	605	539	---	625	557	474	499	531	501	498
31	430	---	615	560	---	632	---	434	---	533	512	---
MEAN	476	406	488	554	543	576	588	427	425	521	519	440

08162000 COLORADO RIVER AT WHARTON, TX--Continued
(National stream-quality accounting and radiochemical network)

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	16.0	15.5	---	17.0	13.0	20.5	24.0	26.0	29.0	30.0	27.5
2	19.0	16.0	12.5	12.0	18.0	15.0	21.0	23.0	26.0	29.0	30.0	27.0
3	20.0	14.0	12.0	13.0	19.5	---	21.0	22.0	25.0	29.0	---	28.0
4	21.0	15.0	13.5	14.0	19.0	16.0	21.5	22.0	27.0	29.0	29.0	28.0
5	20.0	15.0	13.5	10.0	19.0	16.0	22.5	23.0	27.0	---	29.0	28.0
6	18.0	16.5	13.5	10.0	18.0	17.0	23.5	23.0	27.0	---	29.0	28.0
7	20.0	17.5	14.0	12.5	16.0	16.5	23.0	25.0	28.5	---	29.0	26.0
8	22.0	18.0	15.0	10.0	14.5	17.0	23.5	25.0	28.0	---	29.0	26.0
9	23.0	20.0	16.5	8.0	12.5	18.5	23.0	25.0	27.0	---	29.0	27.0
10	24.0	20.0	18.0	8.0	11.0	20.0	19.0	25.0	27.0	---	---	26.0
11	25.0	23.0	15.0	9.0	8.0	22.0	19.0	23.0	27.0	---	29.0	27.0
12	24.0	21.0	11.0	9.0	8.0	20.0	21.0	25.0	27.0	---	28.0	28.0
13	26.0	22.0	9.0	9.5	9.0	20.0	22.0	24.0	28.0	29.0	28.5	29.0
14	26.0	23.0	7.0	9.5	12.5	18.5	23.0	24.0	28.0	29.0	29.0	28.0
15	25.0	23.5	7.0	11.0	12.0	19.0	21.0	24.0	28.0	29.0	29.0	27.5
16	22.5	20.0	9.0	13.5	17.0	20.0	20.0	25.0	28.0	29.0	---	28.0
17	24.0	21.0	10.0	14.0	19.0	19.5	21.0	25.0	28.0	---	---	28.0
18	25.0	22.0	9.0	15.0	19.5	20.0	22.0	23.0	27.0	---	30.0	28.0
19	26.0	22.0	9.0	15.0	20.0	17.5	22.0	21.0	27.0	29.0	30.0	28.0
20	---	19.0	10.0	14.0	20.0	15.0	21.0	20.0	26.5	29.5	30.0	27.0
21	24.0	15.5	10.0	16.0	18.0	15.0	21.0	22.0	26.0	30.0	29.0	27.5
22	24.0	17.0	11.5	16.0	13.0	16.0	21.0	22.0	---	29.0	28.0	28.0
23	24.0	19.0	12.0	14.0	13.5	16.5	22.0	24.0	27.0	30.0	26.0	28.0
24	24.0	---	12.0	15.0	14.5	17.0	22.0	---	27.0	30.0	29.0	28.0
25	24.0	21.0	10.0	15.0	16.0	18.0	22.5	---	27.5	30.0	28.0	28.0
26	24.0	21.5	8.5	13.5	17.0	18.0	23.0	25.0	28.0	30.0	28.0	27.0
27	22.0	20.0	12.0	12.0	18.0	19.0	23.5	25.0	28.0	---	28.5	28.0
28	20.0	18.0	13.0	11.0	15.5	19.0	22.5	24.0	29.0	30.0	29.0	28.5
29	18.0	18.0	---	14.0	---	19.0	24.0	25.0	29.0	30.0	26.5	27.5
30	17.0	18.0	13.0	15.0	---	---	24.0	26.0	29.0	30.0	26.0	28.0
31	16.0	---	16.0	16.0	---	20.0	---	25.0	---	30.0	27.5	---
MEAN	22.0	19.0	12.0	12.5	15.5	18.0	22.0	24.0	27.5	29.5	28.5	27.5

08162500 COLORADO RIVER NEAR BAY CITY, TX

LOCATION.--Lat 28°58'26", long 96°00'44", Matagorda County, Hydrologic Unit 12090302, on right bank, 6,300 ft downstream from bridge on State Highway 35, 7,100 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.8 mi west of Bay City, and at mile 32.5.

DRAINAGE AREA.--42,240 mi², approximately, of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--July 1940 (WSP 1046), April 1948 to current year. Records of elevation collected in this vicinity since 1946 are contained in reports of the National Weather Service.
Water-quality records.--Chemical and biochemical analyses: Oct. 1974 to September 1975.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. July 2-6, 1940, nonrecording gage at highway bridge, 6,300 ft upstream at datum 30.60 ft lower.

REMARKS.--Estimated daily discharges: Oct. 2, 5-9, 19, 23-26, Nov. 12, and Aug. 22-28. Records good except those for estimated daily discharges, which are poor. There are diversions above station for irrigation and municipal supply. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08161000. Gage-height telemeter at station.

AVERAGE DISCHARGE.--38 years (water years 1949-86), 2,321 ft³/s (1,682,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 84,100 ft³/s June 26, 1960; maximum elevation, 48.2 ft, present datum, July 4, 1940, at site 6,300 ft upstream at bridge on State Highway 35, observed by U.S. Army Corps of Engineers (elevation 46.6 ft) adjusted to present site; no flow at times in 1951-53 and 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since 1869, 56.1 ft Dec. 10, 1913. Flood in July 1869 probably reached about same elevation. Elevation of other floods are as follows: May 8, 1922, 55.4 ft; June 1929, 55.0 ft; June 22, 1935, 54.6 ft; Oct. 5, 1936, 52.2 ft; Aug. 2, 1938, 53.4 ft; Nov. 27, 1940, 47.6 ft. All above flood data from information by Texas and New Orleans Railroad Co. and adjusted present site.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,600 ft³/s Nov. 28 at 0430 hours (elevation, 24.23 ft); minimum daily, 48 ft³/s Apr. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1660	776	12500	1630	991	768	75	494	1440	2360	488	632
2	2180	749	6380	1660	904	768	66	702	2350	2240	478	635
3	1660	778	4540	1630	842	737	60	1150	4240	2040	498	405
4	1500	800	3390	1620	838	760	55	2220	2690	1300	481	367
5	1290	723	2780	1590	807	723	51	2750	2430	1040	453	393
6	1050	680	2350	1600	2320	1900	49	1960	2510	873	501	489
7	800	627	2030	1630	4160	3180	48	1490	2160	715	916	906
8	674	604	1820	1550	3350	2490	63	1200	2330	645	863	1160
9	556	600	1680	1430	2120	1700	419	1040	5710	734	787	3720
10	490	617	1570	1490	1600	1350	602	933	8050	849	923	7370
11	400	625	1990	1540	1340	1160	636	1290	6380	952	838	3010
12	263	9280	5230	1610	1240	947	840	2280	5630	942	790	1420
13	270	10800	4060	1670	1150	549	1010	5390	6130	945	893	1070
14	236	4920	3560	1670	1060	710	1060	6590	5270	976	936	3510
15	246	2650	4360	1410	979	958	883	2990	5080	1010	933	4080
16	764	1780	3320	1240	939	1540	742	1880	4860	965	888	2300
17	828	1450	2410	1250	890	1530	649	1520	5030	816	839	1480
18	1590	1200	2090	1250	831	1370	528	3230	5250	725	696	964
19	2920	1110	1930	2040	782	996	443	7390	5900	766	621	723
20	2140	1040	1700	3220	777	800	476	10000	6650	738	548	487
21	1670	918	1570	2220	765	672	607	8900	6090	801	358	359
22	1830	849	1590	1540	739	553	707	5240	5130	805	340	337
23	3200	791	1580	1220	729	473	608	2870	4800	746	500	696
24	4400	696	1550	1630	720	419	533	1890	4030	655	650	904
25	3000	3250	1420	3450	708	448	386	1430	3070	593	750	699
26	2280	14200	1300	2990	708	378	188	1350	2790	675	800	599
27	1610	20400	1220	1840	785	189	102	1390	2890	645	800	586
28	1280	21100	1180	1590	744	124	163	1940	2660	587	750	652
29	1110	12100	1150	1500	---	97	212	2630	2440	512	674	645
30	927	15000	1210	1200	---	94	321	1540	2480	501	714	666
31	821	---	1440	1100	---	85	---	1230	---	512	631	---
TOTAL	43645	131113	84900	53010	33818	28468	12582	86909	126470	28663	21337	41264
MEAN	1408	4370	2739	1710	1208	918	419	2804	4216	925	688	1375
MAX	4400	21100	12500	3450	4160	3180	1060	10000	8050	2360	936	7370
MIN	236	600	1150	1100	708	85	48	494	1440	501	340	337
AC-FT	86570	260100	168400	105100	67080	56470	24960	172400	250900	56850	42320	81850

CAL YR 1985 TOTAL 723920 MEAN 1983 MAX 21100 MIN 87 AC-FT 1436000
WTR YR 1986 TOTAL 692179 MEAN 1896 MAX 21100 MIN 48 AC-FT 1373000

08162600 TRES PALACIOS RIVER NEAR MIDFIELD, TX

LOCATION.--Lat 28°55'40", long 96°10'15", Matagorda County, Hydrologic Unit 12100401, at left downstream end of bridge on Farm Road 456, 1.0 mi downstream from Juanita Creek, and 2.4 mi southeast of Midfield.

DRAINAGE AREA.--145 mi².

PERIOD OF RECORD.--June 1970 to current year. Prior to October 1973, published as Tres Palacios Creek near Midfield.
Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1968 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 5.38 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Ten known diversions above station (amounts unknown). An undetermined amount of water from irrigated ricefields enters river upstream at various points. Extensive channel cleaning upstream and downstream from gage was begun in the 1983 water year and completed during the 1984 water year.

AVERAGE DISCHARGE.--16 years, 157 ft³/s (113,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,000 ft³/s Oct. 17, 1984 (gage height, 32.43 ft, from floodmark); minimum daily, 1.0 ft³/s Nov. 3-5, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1885, 37 ft in June 1960 and 35 ft in August 1945, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 21	2400	1,730	16.04	Dec. 12	0200	*2,710	*20.30

Minimum daily discharge, 3.9 ft³/s May 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	336	23	11	8.7	10	8.7	13	21	17	14	14	11
2	109	70	9.4	8.7	9.5	8.7	12	39	22	13	9.6	9.5
3	54	97	9.1	8.7	9.3	8.8	14	64	144	13	8.7	9.2
4	34	58	8.7	8.7	12	11	8.4	43	234	14	16	12
5	24	36	8.7	8.7	18	19	8.0	26	100	20	21	14
6	16	27	8.1	9.1	13	17	9.7	14	107	21	12	12
7	12	23	8.2	9.4	8.1	8.4	16	7.2	93	20	10	30
8	11	20	8.5	12	6.7	11	16	4.8	203	39	11	47
9	8.8	19	8.7	13	6.1	12	8.7	3.9	442	40	10	47
10	8.9	18	8.7	20	6.9	9.7	21	16	275	31	9.1	39
11	9.4	17	769	16	6.4	9.6	42	57	171	20	9.6	30
12	9.1	16	1970	13	5.4	9.8	34	58	339	15	10	26
13	8.4	16	777	11	5.5	8.7	27	22	159	17	9.0	24
14	12	16	332	9.5	5.8	7.4	19	12	74	16	8.7	22
15	16	15	139	9.0	7.1	7.1	13	8.6	44	14	9.1	32
16	13	15	73	8.4	8.4	8.1	8.4	9.4	30	15	9.4	35
17	14	14	50	31	7.3	9.0	7.6	16	48	17	8.7	26
18	13	10	37	31	6.5	13	9.0	71	25	17	7.8	25
19	9.8	7.4	29	20	5.9	11	7.8	89	18	17	8.7	26
20	12	7.7	23	13	6.8	10	17	44	19	16	7.6	33
21	273	7.1	19	10	7.0	12	21	15	28	19	7.3	40
22	1010	7.8	17	8.8	7.0	9.7	23	11	36	18	11	45
23	356	8.4	14	7.9	7.2	9.2	14	12	47	17	25	47
24	143	8.7	13	7.4	7.6	7.6	12	9.6	123	15	88	58
25	70	8.7	11	7.4	7.7	7.7	13	9.5	112	28	71	199
26	48	8.7	11	7.1	8.0	7.9	9.2	15	59	43	38	83
27	34	12	10	7.1	8.4	8.0	8.1	22	32	26	22	42
28	28	23	9.9	8.1	8.7	18	11	44	20	29	16	26
29	30	24	9.8	8.9	---	17	16	35	18	43	14	21
30	37	14	9.7	9.2	---	14	13	26	18	28	14	18
31	27	---	9.4	9.7	---	14	---	18	---	19	12	---
TOTAL	2786.4	647.5	4421.9	360.5	226.3	333.1	451.9	843.0	3057	674	528.3	1088.7
MEAN	89.9	21.6	143	11.6	8.08	10.7	15.1	27.2	102	21.7	17.0	36.3
MAX	1010	97	1970	31	18	19	42	89	442	43	88	199
MIN	8.4	7.1	8.1	7.1	5.4	7.1	7.6	3.9	17	13	7.3	9.2
AC-FT	5530	1280	8770	715	449	661	896	1670	6060	1340	1050	2160

CAL YR 1985	TOTAL	59201.1	MEAN	162	MAX	4700	MIN	6.5	AC-FT	117400
WTR YR 1986	TOTAL	15418.6	MEAN	42.2	MAX	1970	MIN	3.9	AC-FT	30580

BEST COPY AVAILABLE

08163500 LAVACA RIVER AT HALLETTSVILLE, TX

LOCATION.--Lat 29°26'35", long 96°56'39", Lavaca County, Hydrologic Unit 12100101, on left bank 75 ft downstream from bridge on U.S. Highway 77 in Hallettsville and 0.7 mi downstream from Campbell Branch.

DRAINAGE AREA.--108 mi^2.

PERIOD OF RECORD.--July 1939 to current year.

REVISED RECORDS.--WSP 1312: 1942(M), 1944(M). WSP 1732: 1952(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 186.72 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 19, 1960, water-stage recorder for high stages and movable nonrecording gage for stages below about 6.2 ft. Apr. 20, 1960, to June 2, 1961, movable nonrecording gage. All gages at same site and datum.

REMARKS.--No estimated daily discharges. Records good except those for discharges below 5 ft^3/s, which are fair. No diversion above station. The Lavaca County Flood Control District No. 3 began channel rectification 1.6 mi downstream from gage in August 1983. This rectification reached the gage Jan. 26, 1984, and was completed in June 1984. The channel was previously rectified in 1959-60.

AVERAGE DISCHARGE.--47 years, 50.0 ft^3/s (6.28 in/yr), 36,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 99,500 ft^3/s Aug. 31, 1981 (gage height, 41.1 ft, from floodmark), from rating curve extended above 23,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times in 1953 and 1956.

Maximum stage since at least 1840, that of Aug. 31, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage from about 1870 to 1940, 32.8 ft July 16, 1936, from information by local resident.

EXTREMES FOR WATER YEAR 1985.--Peak discharges greater than base discharge of 2,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 25	1900	3,680	15.98	Feb. 23	1800	*3,740	*16.04

Minimum daily discharge, 0.14 ft^3/s Aug. 21.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 24	1300	*9,380	*19.71	June 7	2400	2,780	14.86

Minimum daily discharge, 0.15 ft^3/s Oct. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SE
1	.57	7.5	3.7	16	7.8	349	7.9	6.2	2.7	1.2	.44	.3
2	.68	23	3.3	15	8.7	41	7.5	5.3	2.4	1.7	.43	.2
3	.58	12	3.0	30	7.2	23	7.2	5.5	2.5	12	.19	.2
4	.61	7.4	3.3	38	7.2	18	6.9	4.6	2.2	17	.24	.1
5	1.6	5.3	3.3	19	6.9	15	6.7	4.2	2.1	3.9	.26	.2
6	1.3	4.6	3.0	12	6.9	14	6.4	3.7	2.3	2.0	.23	.2
7	1.2	4.1	3.0	11	6.8	13	6.1	3.4	2.4	1.5	.42	.3
8	1.3	3.6	2.9	9.5	6.6	13	6.0	3.4	2.7	1.2	.57	.3
9	16	3.4	3.0	8.8	6.6	13	6.0	3.4	2.4	1.2	.33	.3
10	74	3.3	3.0	8.5	26	12	7.3	3.0	2.2	.96	.34	.4
11	67	2.8	3.0	7.9	16	12	10	2.9	7.4	.94	.48	.7
12	162	2.5	3.0	9.8	8.2	11	50	2.9	6.3	.88	.33	4.0
13	90	2.7	3.5	13	7.5	11	19	2.9	1.7	.84	.23	2.2
14	383	3.0	4.7	30	6.7	20	11	8.4	1.6	.86	.23	1.4
15	38	3.1	5.7	73	6.1	28	8.6	9.6	1.5	.75	.25	1.3
16	14	190	59	137	5.8	22	7.2	10	1.2	.79	.40	1.1
17	6.3	24	33	251	5.8	18	6.4	58	1.3	.82	.34	1.1
18	3.9	13	14	34	5.6	14	5.8	8.0	13	.57	.19	1.1
19	7.6	8.2	9.6	19	5.6	12	5.3	5.3	5.8	.67	.21	.9
20	53	5.2	7.0	14	5.6	14	14	4.4	2.3	.60	.21	.7
21	186	4.4	5.6	11	5.7	13	7.7	4.2	4.5	.46	.14	.6
22	63	4.1	4.7	10	5.8	12	6.4	3.7	3.6	.50	.17	.6
23	34	3.8	4.2	9.9	1550	11	22	3.4	2.6	.45	.17	.5
24	16	3.4	4.0	9.6	253	10	12	3.0	2.5	.44	.86	.5
25	886	3.6	3.6	9.5	30	9.8	7.3	3.0	2.2	.44	.75	.6
26	280	3.3	3.4	8.9	20	9.3	54	2.7	1.5	.46	.40	.8
27	25	3.0	3.5	9.1	26	9.2	14	2.5	2.3	.45	.33	.6
28	16	2.5	3.6	9.0	119	9.2	9.4	2.6	2.5	.56	.32	4.9
29	12	3.0	3.6	9.3	---	8.9	7.1	2.6	1.4	.43	.38	35
30	9.7	4.2	14	9.7	---	8.9	6.5	2.6	.90	.39	.51	23
31	8.6	---	177	8.6	---	8.4	---	2.7	---	.30	.43	--
TOTAL	2458.94	364.0	401.2	861.1	2173.1	782.7	351.7	188.1	90.00	55.26	10.78	84.9
MEAN	79.3	12.1	12.9	27.8	77.6	25.2	11.7	6.07	3.00	1.78	.35	2.8
MAX	886	190	177	251	1550	349	54	58	13	17	.86	3
MIN	.57	2.5	2.9	7.9	5.6	8.4	5.3	2.5	.90	.30	.14	.1
CFSM	.73	.11	.12	.26	.72	.23	.11	.06	.03	.02	.00	.0
IN.	.85	.13	.14	.30	.75	.27	.12	.06	.03	.02	.00	.0
AC-FT	4880	722	796	1710	4310	1550	698	373	179	110	21	16

WTR YR 1985 TOTAL 7821.84 MEAN 21.4 MAX 1550 MIN .14 CFSM .20 IN. 2.69 AC-FT 15510

08163500 LAVACA RIVER AT HALLETTSVILLE, TX--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	4.2	12	3.1	3.3	2.9	3.9	1.9	156	1.6	.29	3.7
2	3.6	9.8	12	3.2	3.6	3.0	3.2	1.3	240	1.5	.29	2.5
3	2.9	1.8	10	3.2	11	5.9	3.6	1.6	907	1.5	.33	1.6
4	2.7	1.3	8.5	3.1	75	14	4.0	1.3	121	1.1	.75	1.2
5	2.5	.94	7.6	2.9	26	7.9	3.2	1.1	92	.96	.35	1.1
6	2.6	.66	7.4	2.7	10	6.5	2.5	.99	76	.86	.65	3.8
7	2.7	.48	7.6	2.8	7.4	5.2	2.1	.95	440	.88	.28	3.5
8	2.5	.35	6.6	4.9	6.2	4.5	2.1	1.0	663	1.2	.18	4.1
9	2.2	.29	5.7	3.8	5.5	4.1	1.8	1.2	95	1.1	.18	3.3
10	2.2	.26	5.8	4.7	5.1	4.1	2.1	3.2	43	.94	.17	2.7
11	2.0	136	12	8.0	5.1	4.7	1.9	1.8	23	.86	1.7	2.2
12	2.2	32	52	6.6	4.9	7.5	1.8	1.5	150	.87	.77	9.5
13	2.6	5.7	31	5.2	4.9	4.8	1.9	1.2	142	.63	.88	5.7
14	2.3	2.5	13	5.1	4.9	4.5	1.9	1.0	17	.61	.78	3.7
15	3.3	1.6	8.1	4.7	5.0	4.9	1.7	1.9	20	.51	1.2	2.2
16	.80	1.5	7.1	4.6	5.1	4.7	1.6	1.3	14	.50	.68	3.4
17	.79	1.2	6.6	4.6	4.8	4.4	1.4	17	131	.44	.65	3.3
18	.85	1.1	6.4	4.6	4.6	4.8	1.6	58	109	.42	.39	3.1
19	3.2	1.0	5.4	4.6	4.6	4.7	2.2	41	17	.41	.29	2.0
20	.66	.72	4.6	4.6	4.6	3.6	2.4	14	32	.34	.28	4.6
21	2.8	.56	4.9	4.6	4.2	3.5	2.0	7.9	18	.35	.27	3.3
22	3.2	.51	4.3	4.1	3.9	3.2	1.4	5.5	6.5	.38	.88	2.4
23	28	.55	4.2	3.8	3.6	3.1	1.0	3.8	4.4	.42	5.2	2.2
24	13	3240	3.9	3.8	3.6	3.7	.89	2.8	4.1	.36	1.1	2.5
25	4.9	140	3.6	3.8	3.7	3.8	.78	25	3.3	.32	.71	2.1
26	2.5	30	3.5	3.6	3.8	4.1	.78	25	2.9	.37	.62	2.0
27	1.3	36	3.5	3.4	3.5	4.4	.78	23	2.6	.51	.51	1.7
28	.76	92	3.4	3.4	3.1	4.2	.78	15	2.4	.44	.54	2.2
29	.43	25	3.7	3.4	---	4.1	.86	7.4	2.1	.38	.56	2.4
30	.26	16	3.6	3.4	---	4.1	1.1	50	1.8	.46	3.4	1.9
31	.15	---	3.6	3.4	---	4.1	---	157	---	.28	4.4	---
TOTAL	105.10	3784.02	271.6	127.7	231.0	149.0	57.27	475.64	3536.1	21.50	29.28	89.9
MEAN	3.39	126	8.76	4.12	8.25	4.81	1.91	15.3	118	.69	.94	3.00
MAX	28	3240	52	8.0	75	14	4.0	157	907	1.6	5.2	9.5
MIN	.15	.26	3.4	2.7	3.1	2.9	.78	.95	1.8	.28	.17	1.1
CFSM	.03	1.17	.08	.04	.08	.04	.02	.14	1.09	.01	.01	.03
IN.	.04	1.30	.09	.04	.08	.05	.02	.16	1.22	.01	.01	.03
AC-FT	208	7510	539	253	458	296	114	943	7010	43	58	178

CAL YR 1985 TOTAL 8758.42 MEAN 24.0 MAX 3240 MIN .14 CFSM .22 IN. 3.02 AC-FT 17370
WTR YR 1986 TOTAL 8878.11 MEAN 24.3 MAX 3240 MIN .15 CFSM .22 IN. 3.06 AC-FT 17610

08164000 LAVACA RIVER NEAR EDNA, TX
(National stream-quality accounting network)

LOCATION.--Lat 28°57'35", long 96°41'10", Jackson County, Hydrologic Unit 12100101, at downstream side near center of upstream bridge of two bridges on U.S. Highway 59, 660 ft upstream from Texas and New Orleans Railroad Co. bridge, and 2.8 mi southwest of Edna.

DRAINAGE AREA.--817 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WSP 1923: 1955. WDR TX-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 13.88 ft above National Geodetic Vertical Datum of 1929. Prior to June 6, 1939, nonrecording gage (property of U. S. Army Corps of Engineers); June 6, 1939, to Apr. 3, 1957, nonrecording gage at site 110 ft downstream; Apr. 4, 1957, to Mar. 21, 1961, nonrecording gage; all at same datum.

REMARKS.--Estimated daily discharges: June 25 to July 1. Records good. Small diversions above station for irrigation.

AVERAGE DISCHARGE.--48 years, 327 ft^3/s (5.44 in/yr), 236,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft^3/s July 1, 1940 (gage height, 32.51 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 33.8 ft May 25, 1936 (discharge, 83,400 ft^3/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 13	1200	*9,490	*22.73	June 9	0900	5,950	a20.30
June 4	1400	6,540	20.80				

a From floodmark.

Minimum daily discharge, 8.1 ft^3/s Sept. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	486	18	214	57	40	39	29	19	138	58	15	9.6
2	149	25	163	55	41	37	29	23	183	53	14	9.2
3	77	404	129	53	41	37	29	23	2420	53	13	8.1
4	53	195	115	53	53	37	29	21	5840	51	13	11
5	41	76	107	53	198	36	33	21	2200	49	13	12
6	33	49	93	53	296	42	32	21	683	46	14	18
7	27	38	84	53	134	42	30	18	362	43	14	112
8	24	32	78	53	80	42	30	17	3700	41	13	111
9	21	29	75	53	67	40	30	16	5100	36	12	46
10	19	26	72	53	62	39	29	28	1600	33	12	32
11	18	295	325	56	58	37	29	29	650	31	12	24
12	18	4830	304	59	50	37	29	21	1900	31	12	16
13	17	8730	351	64	51	42	29	18	800	31	11	292
14	20	2090	275	58	50	46	29	18	1200	29	10	200
15	25	406	180	57	48	45	29	18	670	27	14	166
16	46	288	121	50	47	42	29	18	320	29	13	49
17	39	224	97	49	46	41	31	21	240	25	13	31
18	35	193	85	61	44	41	26	31	740	22	12	23
19	34	165	77	60	42	39	26	27	1000	24	9.9	18
20	63	140	77	51	42	37	24	24	440	21	8.9	16
21	52	117	76	49	42	35	26	38	290	19	8.2	15
22	44	105	76	48	41	34	25	36	210	18	10	15
23	104	97	68	45	40	34	19	24	160	17	19	21
24	109	92	68	44	39	39	17	17	140	15	19	23
25	71	248	66	43	39	39	16	20	120	15	17	17
26	54	2690	62	42	39	38	18	53	105	16	13	14
27	39	749	60	41	39	36	18	239	90	18	12	13
28	30	1570	60	41	39	36	15	205	80	16	12	13
29	25	711	60	41	---	34	14	75	72	15	10	20
30	21	330	59	41	---	33	17	40	65	15	9.0	24
31	18	---	58	40	---	31	---	120	---	15	8.3	---
TOTAL	1812	24962	3735	1576	1808	1187	766	1299	31518	912	386.3	1378.9
MEAN	58.5	832	120	50.8	64.6	38.3	25.5	41.9	1051	29.4	12.5	46.0
MAX	486	8730	351	64	296	46	33	239	5840	58	19	292
MIN	17	18	58	40	39	31	14	16	65	15	8.2	8.1
CFSM	.07	1.02	.15	.06	.08	.05	.03	.05	1.29	.04	.02	.06
IN.	.08	1.14	.17	.07	.08	.05	.03	.06	1.44	.04	.02	.06
AC-FT	3590	49510	7410	3130	3590	2350	1520	2580	62520	1810	766	2740

CAL YR 1985 TOTAL 146453 MEAN 401 MAX 18800 MIN 12 CFSM .49 IN. 6.67 AC-FT 290500
WTR YR 1986 TOTAL 71340.2 MEAN 195 MAX 8730 MIN 8.1 CFSM .24 IN. 3.25 AC-FT 141500

08164000 LAVACA RIVER NEAR EDNA, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1945 to September 1977. Chemical and biochemical analyses: February 1971 to current year. Pesticide analyses: January 1968 to August 1981. Sediment analyses: November 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1977 to September 1981.
WATER TEMPERATURES: November 1977 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 899 microsiemens April 22, 1978; minimum daily, 100 microsiemens May 5, 1979, and May 20, 1980.
WATER TEMPERATURES: Maximum daily, 33.0°C July 16, 1978; minimum daily, 5.0°C January 22, 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT 10...	1600	19	554	7.90	27.5	15	6.4	--	>1.2	120	330	210
JAN 15...	1600	57	792	8.10	13.5	1.7	11.0	104	0.8	--	--	280
FEB 27...	1340	18	778	8.20	20.5	--	8.5	94	1.1	--	--	300
APR 24...	1100	17	798	8.00	20.5	26	8.8	97	1.0	110	160	300
JUL 17...	0900	26	671	7.90	29.5	--	8.0	--	1.2	--	--	270
SEP 04...	1110	11	737	8.20	27.5	4.1	7.2	--	1.3	720	170	260

DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT 10...	0	73	6.0	39	1	4.1	225	20	44	0.2	20	339
JAN 15...	12	100	6.4	54	1	3.1	265	21	73	0.3	13	442
FEB 27...	28	110	6.5	54	1	2.8	273	20	71	0.3	17	--
APR 24...	13	110	7.1	58	2	3.3	305	17	73	0.3	20	481
JUL 17...	8	96	6.4	44	1	3.5	258	18	55	0.3	24	--
SEP 04...	0	93	6.8	52	1	3.6	272	15	63	0.3	23	412

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)
OCT 10...	340	--	<0.01	--	<0.50	0.05	0.05	0.55	0.6	0.14	0.11	0.10
JAN 15...	410	0.01	<0.01	<0.10	<0.10	0.04	0.04	0.16	0.2	0.09	0.07	0.07
FEB 27...	450	<0.01	--	<0.10	--	0.06	--	0.44	0.5	0.13	--	--
APR 24...	460	<0.01	<0.01	<0.10	<0.10	0.05	0.04	0.35	0.4	0.15	0.13	0.13
JUL 17...	400	0.01	--	<0.10	--	0.06	--	0.44	0.5	0.14	--	--
SEP 04...	420	<0.01	<0.01	<0.10	<0.10	0.04	0.04	0.46	0.5	0.09	0.06	0.07

08164000 LAVACA RIVER NEAR EDNA, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT 10...	0.31	235	12	6	20	4	330	<0.5	<1	<1	<3	5
JAN 15...	0.21	37	5.7	33	20	2	330	<0.5	<1	<1	<3	1
FEB 27...	--	--	--	--	--	--	--	--	--	--	--	--
APR 24...	0.4	106	4.9	29	--	--	--	--	--	--	--	--
JUL 17...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 04...	0.21	14	0.42	95	<10	4	330	<0.5	<1	<1	<3	1

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 10...	9	<1	11	43	0.1	<10	4	<1	<1	260	<6	5
JAN 15...	6	<1	14	20	<0.1	<10	2	<1	<1	370	<6	9
FEB 27...	--	--	--	--	--	--	--	--	--	--	--	--
APR 24...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 17...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 04...	7	<5	16	37	<0.1	<10	<1	<1	<1	340	<6	5

08164300 NAVIDAD RIVER NEAR HALLETTSVILLE, TX

LOCATION.--Lat 29°28'00", long 96°48'45", Lavaca County, Hydrologic Unit 12100102, on right bank 28 ft downstream from bridge on U.S. Highway 90-A, 0.8 mi downstream from Mixons Creek, 1.2 mi southwest of Sublime, and 8 mi northeast of Hallettsville.

DRAINAGE AREA.--332 mi².

PERIOD OF RECORD.--October 1961 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 159.28 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known diversion above station.

AVERAGE DISCHARGE.--25 years, 147 ft³/s (6.01 in/yr), 106,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,500 ft³/s Sept. 13, 1974 (gage height, 36.05 ft); no flow Aug. 5-7, 22, Sept. 2-16, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, 40 ft in June 1940; flood in July 1936 reached a stage of 39 ft, from information by local residents and Southern Pacific Railroad Co.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 25	0400	*14,200	*28.78	No other peak greater than base discharge.			

Minimum daily discharge, 0.51 ft³/s Aug. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	12	176	25	19	22	19	8.9	164	8.7	.70	.76
2	12	23	178	25	19	22	19	23	65	8.3	.65	1.1
3	6.5	21	87	26	20	26	19	21	541	7.3	.63	1.9
4	4.5	20	70	24	302	61	20	14	310	6.2	.63	1.1
5	3.3	14	60	23	214	43	21	12	106	5.7	.67	.78
6	2.7	12	54	23	77	31	19	11	63	5.3	.67	1.1
7	2.6	12	51	25	51	27	18	9.3	63	4.9	.70	5.7
8	2.4	11	49	26	42	26	18	8.5	901	5.8	.70	10
9	2.4	11	46	28	38	25	17	7.9	634	5.5	.68	3.8
10	2.4	11	43	36	36	25	16	13	179	5.0	.62	1.9
11	2.4	610	124	38	34	24	18	22	88	4.2	.67	1.3
12	2.4	1240	268	31	33	39	19	15	67	3.8	1.0	175
13	2.6	99	198	28	32	26	18	11	68	3.3	1.1	64
14	2.7	49	92	26	32	24	16	9.2	40	3.0	1.0	17
15	7.1	38	59	25	32	24	14	9.8	93	2.7	.94	9.6
16	11	34	49	24	31	25	12	11	74	2.7	.78	6.6
17	7.6	35	44	26	31	24	12	43	33	2.4	1.2	5.8
18	5.3	36	41	80	30	23	12	469	57	2.1	.97	5.3
19	4.6	31	38	45	29	22	13	110	39	1.9	.68	4.7
20	52	28	35	31	27	20	15	41	26	1.9	.56	4.2
21	34	25	34	27	26	19	13	26	25	1.8	.51	4.0
22	227	25	33	24	25	19	10	19	23	1.5	.51	4.1
23	294	25	33	22	24	19	9.1	16	19	1.4	.92	4.7
24	55	989	31	22	24	19	8.4	14	17	1.4	1.3	4.3
25	27	9270	29	21	25	19	8.1	12	15	1.3	1.4	3.9
26	19	813	28	19	25	20	7.9	27	14	1.2	1.1	3.4
27	16	1340	29	19	25	20	7.9	24	13	1.1	.79	3.1
28	13	412	28	19	23	19	8.2	17	12	.97	.70	3.0
29	12	193	28	19	---	19	8.0	12	11	.92	.68	3.3
30	11	124	27	19	---	19	8.1	10	9.4	.78	.63	3.8
31	11	---	27	19	---	19	---	222	---	.77	.63	---
TOTAL	885.5	15563	2089	845	1326	770	423.7	1268.6	3769.4	103.84	24.72	359.24
MEAN	28.6	519	67.4	27.3	47.4	24.8	14.1	40.9	126	3.35	.80	12.0
MAX	294	9270	268	80	302	61	21	469	901	8.7	1.4	175
MIN	2.4	11	27	19	19	19	7.9	7.9	9.4	.77	.51	.76
AC-FT	1760	30870	4140	1680	2630	1530	840	2520	7480	206	49	713

CAL YR 1985 TOTAL 39560.69 MEAN 108 MAX 9270 MIN .27 AC-FT 78470
WTR YR 1986 TOTAL 27428.00 MEAN 75.1 MAX 9270 MIN .51 AC-FT 54400

08164350 NAVIDAD RIVER NEAR SPEAKS, TX

LOCATION.--Lat 29°19'18", long 96°42'32", Lavaca County, Hydrologic Unit 12100102, at right downstream end of bridge on Farm Road 530, 100 ft downstream from Ragsdale Creek, and 4.6 mi north of Speaks.

DRAINAGE AREA.--437 mi^2.

PERIOD OF RECORD.--October 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 120.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 3-15 and Sept. 27-30. Records good. There are no known diversions above this station.

AVERAGE DISCHARGE.--5 years, 137 ft^3/s (4.26 in/yr), 99,260 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,300 ft^3/s May 14, 1982 (gage height, 27.89 ft, from floodmark); minimum daily, 1.2 ft^3/s Sept. 26, 27, 1985.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 11	2400	7,570	23.85	Nov. 28	0500	3,190	17.63
Nov. 26	0300	*9,760	*25.29				

Minimum daily discharge, 1.5 ft^3/s July 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	19	141	33	23	24	24	11	265	9.5	1.8	2.8
2	43	29	270	30	23	23	24	11	137	8.6	1.8	3.7
3	20	70	139	30	24	26	23	30	423	7.9	1.9	3.0
4	15	37	101	29	148	87	22	26	811	7.0	2.0	2.8
5	12	30	88	29	465	73	23	18	259	6.5	2.0	3.9
6	10	22	77	27	166	53	24	15	136	6.1	2.0	5.0
7	8.5	19	70	27	85	37	23	13	101	6.3	2.4	8.1
8	7.5	18	67	31	67	32	22	12	1180	6.0	2.7	7.4
9	7.0	17	63	46	57	31	21	11	1600	6.8	2.7	22
10	6.5	15	59	46	52	30	20	10	494	6.3	2.6	13
11	6.3	2440	142	53	48	30	20	16	290	5.2	2.6	7.9
12	6.0	5850	407	50	44	65	22	25	310	4.7	3.0	22
13	6.0	1280	349	40	42	61	22	19	143	4.4	3.0	238
14	6.0	180	195	36	41	37	23	13	88	3.9	3.4	64
15	6.0	133	103	33	41	34	20	12	71	3.6	4.2	25
16	6.7	90	78	31	40	35	18	11	147	3.7	3.9	13
17	12	74	67	57	39	35	16	14	85	3.4	3.3	8.0
18	16	68	63	59	38	33	15	337	104	3.1	2.7	5.7
19	11	66	56	93	35	32	16	350	82	3.2	2.9	5.3
20	11	55	49	57	35	29	18	87	62	2.7	2.7	4.3
21	66	47	46	42	33	25	18	61	39	2.3	2.7	3.8
22	62	42	44	36	29	25	18	41	36	2.2	2.7	3.5
23	615	40	43	30	28	25	16	30	34	2.1	3.9	3.6
24	148	204	41	27	28	25	14	24	29	1.8	5.2	3.5
25	72	5010	37	27	28	25	13	20	20	1.8	4.7	2.9
26	46	7230	34	27	28	25	12	19	19	1.7	4.2	2.5
27	33	1350	33	24	28	25	12	45	17	1.6	4.2	2.4
28	28	2150	33	24	26	25	12	46	15	1.8	3.5	2.3
29	23	367	33	23	---	26	12	23	13	1.7	2.7	2.2
30	21	188	34	23	---	25	11	23	11	1.5	2.7	2.5
31	20	---	33	23	---	25	---	114	---	1.7	2.7	---
TOTAL	1457.5	27140	2995	1143	1741	1083	554	1487	7021	129.1	92.8	494.1
MEAN	47.0	905	96.6	36.9	62.2	34.9	18.5	48.0	234	4.16	2.99	16.5
MAX	615	7230	407	93	465	87	24	350	1600	9.5	5.2	238
MIN	6.0	15	33	23	23	23	11	10	11	1.5	1.8	2.2
AC-FT	2890	53830	5940	2270	3450	2150	1100	2950	13930	256	184	980

CAL YR 1985 TOTAL 70868.8 MEAN 194 MAX 7230 MIN 1.2 AC-FT 140600
WTR YR 1986 TOTAL 45337.5 MEAN 124 MAX 7230 MIN 1.5 AC-FT 89930

08164450 SANDY CREEK NEAR LOUISE, TX

LOCATION.--Lat 29°09'36", long 96°32'46", Jackson County, Hydrologic Unit 12100102, on left bank at downstream end of bridge on Farm Road 710, 0.9 mi upstream from Goldenrod Creek, and 9.1 mi northwest of Louise.

DRAINAGE AREA.--289 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 59.72 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good except those for discharges below 5 ft³/s, which are poor. Much of the low flow during the irrigation season (April to September) comes from drainage from ricefields irrigated by water originally diverted from the Colorado River. No known diversion above station.

AVERAGE DISCHARGE.--9 years, 181 ft³/s (8.51 in/yr), 131,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s Sept. 14, 1978 (gage height, 23.03 ft), from rating curve extended above 7,800 ft³/s; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 13	0200	*9,420	*20.46	June 9	2000	3,570	15.25
Nov. 25	1400	2,180	12.81	June 12	1200	3,620	15.33
Nov. 28	0900	1,530	11.33				

Minimum daily discharge, 0.04 ft³/s Jan. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1110	6.8	165	2.5	1.8	.14	1.6	15	266	20	20	42
2	892	26	115	2.3	.58	.19	6.9	18	408	12	13	38
3	573	37	73	3.0	.81	2.3	4.5	11	546	12	6.1	42
4	278	36	45	2.6	1.0	.35	2.6	10	343	14	4.9	44
5	176	32	27	1.4	15	.25	1.6	7.7	308	13	30	50
6	115	23	22	1.7	155	.24	3.0	1.9	334	12	55	76
7	67	14	18	1.3	112	.24	3.4	1.4	258	19	81	306
8	37	10	14	2.2	39	.61	1.3	.76	849	33	71	511
9	46	7.3	11	2.4	22	.34	8.8	.34	3110	85	53	377
10	39	7.9	9.3	3.3	19	.29	12	3.9	3350	123	39	239
11	25	331	174	4.9	18	.31	23	13	2820	186	41	154
12	28	5440	698	6.1	14	.43	11	31	3350	200	54	102
13	19	7760	850	5.5	9.0	15	17	31	2400	157	68	439
14	14	4020	575	4.2	5.4	16	18	12	1800	105	61	134
15	30	2440	324	4.9	3.4	8.7	7.9	2.7	1070	77	51	71
16	57	1650	143	2.6	4.5	6.7	2.7	1.4	661	88	47	47
17	63	1050	87	3.3	3.8	5.2	2.3	5.3	480	96	37	31
18	42	623	61	3.6	2.4	3.2	2.2	38	408	84	21	16
19	41	337	44	4.8	1.4	1.6	2.3	93	295	65	1.6	6.9
20	43	188	34	4.5	.60	1.3	11	57	170	63	.97	18
21	35	99	26	3.4	.42	1.2	26	18	150	62	.79	40
22	86	40	20	2.3	.15	1.3	21	4.1	147	54	.96	58
23	67	16	16	1.5	.11	1.4	5.0	2.3	126	49	5.0	140
24	59	14	12	1.4	.11	1.4	7.8	1.9	108	46	36	210
25	57	1470	7.9	.74	.14	1.5	4.1	2.0	88	34	105	138
26	40	681	7.1	.26	.14	1.6	2.2	15	69	30	92	112
27	29	369	6.2	.04	.13	1.6	2.0	33	50	23	63	96
28	24	1230	4.9	2.5	.12	1.5	2.0	94	39	25	50	85
29	19	627	4.2	14	---	1.5	1.4	63	31	11	41	89
30	12	340	3.9	10	---	1.6	5.5	36	27	10	43	94
31	4.0	---	3.4	4.6	---	1.6	---	65	---	17	42	---
TOTAL	4147.0	28925.0	3600.9	107.84	430.01	79.59	220.2	688.70	24061	1825	1234.32	3805.9
MEAN	134	964	116	3.48	15.4	2.57	7.34	22.2	802	58.9	39.8	127
MAX	1110	7760	850	14	155	16	26	94	3350	200	105	511
MIN	4.0	6.8	3.4	.04	.11	.14	1.3	.34	27	10	.79	6.9
CFSM	.46	3.34	.40	.01	.05	.01	.03	.08	2.78	.20	.14	.44
IN.	.53	3.72	.46	.01	.06	.01	.03	.09	3.10	.23	.16	.49
AC-FT	8230	57370	7140	214	853	158	437	1370	47720	3620	2450	7550

CAL YR 1985	TOTAL	83492.89	MEAN	229	MAX	7760	MIN	.00	CFSM	.79	IN.	10.75	AC-FT	165600
WTR YR 1986	TOTAL	69125.46	MEAN	189	MAX	7760	MIN	.04	CFSM	.65	IN.	8.90	AC-FT	137100

08164450 SANDY CREEK NEAR LOUISE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1977 to current year. Pesticide analyses: November 1977 to July 1981. Sediment analyses: September 1978 to April 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3
OCT 10...	1800	35	452	8.00	26.5	10	7.1	88	>1.6	150	35
JAN 16...	1240	2.4	265	7.50	14.5	1.3	10.5	102	2.0	81	12
FEB 27...	1630	0.02	308	7.50	21.5	10	8.2	93	2.2	100	12
APR 24...	1600	7.7	899	8.10	27.5	8.0	8.4	--	7.6	170	13
JUL 17...	1100	100	514	7.90	26.5	18	7.8	96	1.9	170	42
SEP 04...	1415	46	535	8.10	29.5	13	6.6	--	3.1	250	96

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 10...	35	14	35	1	6.8	110	25	61	0.3	34	280
JAN 16...	23	5.8	18	0.9	4.7	69	11	33	0.2	10	150
FEB 27...	30	6.2	19	0.9	4.7	88	8.2	33	0.1	18	170
APR 24...	55	9.1	100	3	5.6	162	39	140	0.5	14	460
JUL 17...	44	14	36	1	2.4	126	21	73	0.3	18	280
SEP 04...	78	14	65	2	13	157	20	140	0.3	60	480

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)
OCT 10...	14	0.09	0.01	0.10	0.05	1.0	1.1	0.17	11	3	110
JAN 16...	2	--	0.01	<0.10	0.05	0.45	0.5	0.07	3.7	--	--
FEB 27...	4	--	0.01	<0.10	0.06	0.54	0.6	0.14	10	--	--
APR 24...	13	0.38	0.12	0.50	0.30	1.5	1.8	0.13	5.0	--	--
JUL 17...	29	0.36	0.04	0.40	0.05	0.65	0.7	0.08	7.8	--	--
SEP 04...	25	0.56	0.04	0.60	0.11	1.2	1.3	0.20	13	7	220

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 10...	<1	<10	<1	91	<1	1	<0.1	<1	<1	29
JAN 16...	--	--	--	--	--	--	--	--	--	--
FEB 27...	--	--	--	--	--	--	--	--	--	--
APR 24...	--	--	--	--	--	--	--	--	--	--
JUL 17...	--	--	--	--	--	--	--	--	--	--
SEP 04...	<1	<10	<1	100	<5	34	0.3	<1	<1	9

08164503 WEST MUSTANG CREEK NEAR GANADO, TX

LOCATION.--Lat 29°04'17", long 96°28'01", Jackson County, Hydrologic Unit 12100102, on right bank at downstream end of downstream bridge on U.S. Highway 59, 2.1 mi upstream from Middle Mustang Creek, and 3.6 mi east of Ganado.

DRAINAGE AREA.--178 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 40.12 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Much of low flow during the irrigation season (April to September) comes from drainage from ricefields irrigated by diversions originating from the Colorado River.

AVERAGE DISCHARGE.--9 years, 155 ft³/s (11.8 in/yr), 112,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft³/s Jan. 21, 1980 (gage height, 24.49 ft, from floodmark), from rating curve extended above 8,800 ft³/s; minimum daily, 0.03 ft³/s Jan. 18, 19, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 1	1200	1,640	13.80	June 10	0300	*2,280	*15.58
Nov. 16	0100	1,860	14.22				

Minimum daily discharge, 0.08 ft³/s Mar. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1610	8.2	121	2.5	1.2	.17	3.1	26	228	20	38	19
2	1200	44	106	2.2	1.3	.26	2.6	42	342	22	28	25
3	504	138	70	2.1	1.3	.19	5.5	51	511	15	30	24
4	221	58	45	1.9	1.2	.35	4.0	31	286	19	31	18
5	125	31	32	1.5	1.1	.31	5.4	18	117	25	38	21
6	87	20	24	2.4	1.2	.25	5.2	8.7	94	28	69	39
7	54	15	20	2.3	1.2	.24	3.7	5.8	93	24	93	86
8	32	17	15	2.0	.81	.22	8.9	2.5	1090	27	85	353
9	29	8.9	11	1.6	.52	.25	12	1.3	1980	32	61	347
10	22	6.2	9.0	1.6	1.7	.23	19	4.0	2040	69	40	214
11	14	28	350	1.5	1.8	.28	17	27	1260	90	35	120
12	19	716	955	1.4	1.4	.30	12	46	962	82	35	71
13	26	1140	764	1.0	1.0	.23	20	31	955	66	34	42
14	26	1340	397	.91	1.3	.24	26	15	728	48	27	48
15	32	1610	162	.81	1.1	.23	19	11	400	43	26	48
16	30	1740	93	3.0	1.0	.24	12	8.0	174	40	21	27
17	32	1560	56	4.5	.83	.23	4.9	11	114	38	14	21
18	36	997	40	3.4	.74	.34	3.3	26	100	32	12	17
19	43	187	29	2.6	.69	.24	5.5	103	88	33	11	13
20	242	103	21	2.1	.63	.08	26	54	72	30	8.3	20
21	124	53	16	2.0	.38	.08	65	25	64	30	4.4	20
22	80	34	12	1.8	.28	1.1	55	11	60	41	5.1	16
23	78	23	9.5	3.8	.34	1.2	36	6.0	79	39	13	34
24	64	20	7.7	4.7	.29	1.4	22	4.2	79	36	26	63
25	35	230	6.3	2.1	.28	3.3	11	4.4	53	35	37	85
26	20	641	5.2	1.5	.36	3.4	7.2	161	50	42	43	61
27	18	325	4.5	1.4	.22	2.1	6.5	172	42	39	36	36
28	13	363	3.9	2.3	.15	2.0	7.8	417	30	34	34	28
29	16	346	3.5	1.4	---	1.6	13	233	23	29	23	24
30	9.8	186	3.3	1.1	---	2.0	20	67	19	34	16	30
31	10	---	2.9	.95	---	2.1	---	41	---	38	14	---
TOTAL	4851.8	11983.3	3394.8	64.37	24.32	25.16	458.6	1663.9	12133	1180	987.8	1970
MEAN	157	399	110	2.08	.87	.81	15.3	53.7	404	38.1	31.9	65.7
MAX	1610	1740	955	4.7	1.8	3.4	65	417	2040	90	93	353
MIN	9.8	6.2	2.9	.81	.15	.08	2.6	1.3	19	15	4.4	13
AC-FT	9620	23770	6730	128	48	50	910	3300	24070	2340	1960	3910

CAL YR 1985 TOTAL 60446.4 MEAN 166 MAX 2500 MIN 1.9 AC-FT 119900
WTR YR 1986 TOTAL 38737.05 MEAN 106 MAX 2040 MIN .08 AC-FT 76830

08164503 WEST MUSTANG CREEK NEAR GANADO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1977 to current year. Pesticide analyses: November 1977 to July 1981. Sediment analyses: September 1978 to April 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3
OCT 10...	1715	20	454	7.70	24.5	16	6.5	78	>1.0	150	34
JAN 16...	1100	3.8	810	8.00	13.0	28	10.6	100	6.8	250	58
FEB 27...	1540	0.15	646	8.10	20.0	23	8.9	98	5.2	210	44
APR 24...	1500	19	879	7.80	22.0	32	8.1	92	5.6	260	100
JUL 18...	0935	33	613	7.50	26.5	30	6.9	85	1.0	200	51
SEP 04...	1240	14	506	8.00	28.0	22	6.0	--	2.9	160	28

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 10...	43	11	35	1	7.9	119	23	63	0.3	35	290
JAN 16...	76	14	64	2	8.4	189	58	120	0.3	20	470
FEB 27...	64	12	51	2	9.5	165	28	98	0.3	9.0	370
APR 24...	80	14	63	2	7.4	155	52	130	0.5	19	460
JUL 18...	60	11	50	2	3.2	144	16	97	0.3	26	350
SEP 04...	39	15	38	1	9.4	131	30	64	0.4	49	320

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)
OCT 10...	25	0.09	0.01	0.10	0.06	0.74	0.8	0.17	10	4	150
JAN 16...	35	0.35	0.05	0.40	0.36	1.5	1.9	0.24	9.5	--	--
FEB 27...	25	--	0.01	<0.10	0.06	1.2	1.3	0.12	14	--	--
APR 24...	63	4.07	0.23	4.30	0.10	1.3	1.4	0.23	14	--	--
JUL 18...	61	0.17	0.03	0.20	0.09	0.51	0.6	0.11	7.1	--	--
SEP 04...	40	0.38	0.02	0.40	0.01	1.6	1.6	0.32	15	5	110

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 10...	<1	<10	2	63	<1	4	<0.1	<1	<1	14
JAN 16...	--	--	--	--	--	--	--	--	--	--
FEB 27...	--	--	--	--	--	--	--	--	--	--
APR 24...	--	--	--	--	--	--	--	--	--	--
JUL 18...	--	--	--	--	--	--	--	--	--	--
SEP 04...	<1	<10	<1	36	<5	1	<0.1	<1	<1	12

08164600 GARCITAS CREEK NEAR INEZ, TX

LOCATION.--Lat 28°53'28", long 96°49'08", Victoria County, Hydrologic Unit 12100402, at right downstream end of bridge on U.S. Highway 59 access road, 0.3 mi upstream from Southern Pacific Railroad bridge, 2.0 mi southwest of Inez, and 3.6 mi upstream from Casa Blanca Creek.

DRAINAGE AREA.--91.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 29.16 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known diversion above station. An undetermined amount of return water from irrigation enters stream above station. Recording rain gage at station.

AVERAGE DISCHARGE.--16 years, 53.8 ft^3/s (7.97 in/yr), 38,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,700 ft^3/s June 12, 1981 (gage height, 29.00 ft); no flow for a few days in 1971 and 1985.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage during period 1903-70, 24.5 ft Oct. 26, 1960. In 1929, a flood nearly as high as the 1960 flood occurred, and a flood in September 1967 reached a stage of 23.4 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 8	2000	*934	*12.50				

Minimum daily discharge, 0.03 ft^3/s Aug. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	4.5	4.9	4.9	3.0	1.0	1.2	1.1	94	2.5	.15	.30
2	3.6	6.2	4.2	4.7	2.7	1.0	1.2	1.1	57	2.7	.14	.36
3	2.4	5.7	4.0	4.5	2.8	1.5	1.3	1.1	38	2.5	.13	.38
4	1.8	6.3	4.1	4.5	3.5	3.7	1.4	1.0	31	2.1	.11	.35
5	1.3	8.2	4.2	4.5	3.2	2.2	1.5	1.0	23	1.8	.13	.59
6	1.1	6.2	4.2	4.3	3.2	1.8	1.6	.99	18	1.6	.20	.81
7	1.0	6.8	4.1	4.4	3.0	1.5	1.6	.92	17	1.7	.24	.90
8	1.0	6.9	4.0	6.9	2.6	1.3	1.6	.85	511	1.9	.32	1.4
9	1.0	6.6	3.8	6.1	2.4	1.3	1.6	.77	440	1.8	.35	2.0
10	1.0	6.2	3.8	5.4	2.4	1.4	1.6	30	152	1.6	.28	4.0
11	1.1	12	31	4.7	2.2	1.5	1.5	18	115	1.2	.22	2.6
12	1.0	6.5	21	4.2	2.0	1.6	1.6	8.2	183	1.1	.20	1.1
13	13	5.8	14	4.2	2.0	1.5	1.7	4.7	151	.99	.22	.67
14	3.8	5.8	8.4	4.2	1.9	1.5	1.5	3.6	159	.98	.28	.46
15	10	5.7	6.3	4.2	1.9	1.5	1.4	2.9	86	.92	.28	.45
16	4.0	5.4	5.6	4.2	2.0	1.4	1.1	2.8	57	.84	.22	.66
17	3.8	5.0	5.2	5.4	1.9	1.4	1.1	6.4	63	.80	.15	.73
18	3.8	5.0	5.3	4.5	1.8	1.5	1.2	6.0	78	.82	.09	.45
19	4.9	5.0	4.8	4.5	1.9	1.3	1.2	2.8	52	1.1	.06	.40
20	4.9	4.6	4.5	4.0	1.6	1.3	1.6	2.4	41	1.0	.03	.47
21	4.2	4.5	4.2	3.9	1.6	1.2	2.8	2.2	31	.75	.03	.48
22	4.6	4.5	4.2	3.8	1.6	1.2	2.8	2.2	26	.53	.04	1.1
23	6.4	4.5	4.2	3.6	1.3	1.2	1.8	2.2	31	.39	4.2	7.9
24	16	4.9	4.4	3.4	1.4	1.2	1.2	1.9	20	.34	3.0	2.6
25	26	5.0	4.5	3.4	1.3	1.2	1.2	2.4	13	.32	.85	1.4
26	25	5.0	4.2	3.4	1.2	1.2	1.1	5.0	9.8	.30	.48	.98
27	16	6.1	4.2	3.0	1.2	1.2	1.1	7.9	6.4	.26	.45	.76
28	9.9	5.8	4.2	3.0	1.1	1.2	1.0	98	4.7	.24	.35	.64
29	6.9	5.3	4.5	3.1	---	1.2	1.0	48	3.8	.19	.31	.59
30	5.4	5.0	4.6	3.0	---	1.2	1.0	27	3.0	.18	.27	.42
31	4.5	---	5.5	3.0	---	1.2	---	28	---	.17	.27	---
TOTAL	194.9	175.0	196.1	130.9	58.7	44.4	43.5	321.43	2514.7	33.62	14.05	35.95
MEAN	6.29	5.83	6.33	4.22	2.10	1.43	1.45	10.4	83.8	1.08	.45	1.20
MAX	26	12	31	6.9	3.5	3.7	2.8	98	511	2.7	4.2	7.9
MIN	1.0	4.5	3.8	3.0	1.1	1.0	1.0	.77	3.0	.17	.03	.30
CFSM	.07	.06	.07	.05	.02	.02	.02	.11	.91	.01	.00	.01
IN.	.08	.07	.08	.05	.02	.02	.02	.13	1.02	.01	.01	.01
AC-FT	387	347	389	260	116	88	86	638	4990	67	28	71

CAL YR 1985 TOTAL 19638.75 MEAN 53.8 MAX 4070 MIN .00 CFSM .59 IN. 7.97 AC-FT 38950
WTR YR 1986 TOTAL 3763.25 MEAN 10.3 MAX 511 MIN .03 CFSM .11 IN. 1.53 AC-FT 7460

08164600 GARCITAS CREEK NEAR INEZ, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: April 1965 to current year. Pesticide analyses: July 1970 to July 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3
OCT											
10...	1300	1.0	588	8.00	27.0	5.0	8.6	107	>1.2	190	2
JAN											
16...	1430	4.5	680	7.90	15.0	1.0	10.9	107	1.2	260	21
FEB											
27...	1045	1.2	640	7.90	19.0	2.4	9.1	98	2.2	220	25
APR											
24...	1400	1.2	579	8.20	26.0	1.2	10.3	126	1.7	160	31
JUL											
17...	1330	0.84	522	7.90	31.0	3.0	8.8	--	1.0	160	24
SEP											
04...	0950	0.34	521	8.00	28.0	0.6	6.3	--	1.2	140	22

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT											
10...	60	10	48	2	1.8	189	36	57	0.3	25	350
JAN											
16...	84	12	49	1	1.3	238	51	58	0.3	22	420
FEB											
27...	68	13	48	1	1.3	198	55	58	0.3	20	380
APR											
24...	43	13	54	2	1.4	130	61	68	0.3	17	340
JUL											
17...	48	10	41	1	1.6	137	37	50	0.3	29	300
SEP											
04...	39	11	49	2	1.6	121	38	59	0.2	30	300

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)
OCT										
10...	10	0.01	<0.10	0.04	0.36	0.4	0.01	4.0	2	240
JAN										
16...	1	<0.01	<0.10	0.02	0.28	0.3	0.01	2.0	--	--
FEB										
27...	1	<0.01	<0.10	0.04	0.26	0.3	0.01	5.5	--	--
APR										
24...	4	<0.01	<0.10	0.01	0.39	0.4	0.01	5.2	--	--
JUL										
17...	4	<0.01	<0.10	0.05	0.45	0.5	0.02	6.3	--	--
SEP										
04...	1	<0.01	<0.10	<0.01	--	0.4	0.02	4.5	2	190

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT										
10...	1	<10	<1	9	1	15	<0.1	<1	<1	17
JAN										
16...	--	--	--	--	--	--	--	--	--	--
FEB										
27...	--	--	--	--	--	--	--	--	--	--
APR										
24...	--	--	--	--	--	--	--	--	--	--
JUL										
17...	--	--	--	--	--	--	--	--	--	--
SEP										
04...	<1	<10	1	12	<5	11	0.1	<1	<1	16

08164800 PLACEDO CREEK NEAR PLACEDO, TX

LOCATION.--Lat 28°43'30", long 96°46'07", Victoria County, Hydrologic Unit 12100401, on right bank at downstream end of bridge on Farm Road 616, 0.1 mi downstream from confluence of Lone Tree Creek and Arroyo Palo Alto, 1.2 mi upstream from Ninemile Creek, and 4.4 mi northeast of Placedo.

DRAINAGE AREA.--68.3 mi².

PERIOD OF RECORD.--June 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5.58 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 22 to Jan. 8. Records fair. No known diversion above station.

AVERAGE DISCHARGE.--16 years, 69.3 ft³/s (50,210 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,300 ft³/s Oct. 31, 1981 (gage height, 30.8 ft); no flow at times in 1971, and 1981-84.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1930, 31.9 ft in September 1967 and 30.4 ft in 1960 (probably October), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 11	2100	*1,320	*18.25				

Minimum daily discharge, 0.01 ft³/s July 22 to Aug. 11, and Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	127	4.5	5.0	2.2	1.3	2.1	.42	63	2.1	.01	.43
2	37	279	3.9	4.7	2.3	1.2	2.1	.45	27	1.8	.01	.33
3	20	54	3.9	4.4	1.9	1.5	2.2	.43	21	1.9	.01	.16
4	13	22	4.1	4.3	2.4	2.4	2.5	.53	9.8	1.3	.01	.05
5	9.3	11	4.2	4.2	2.2	1.9	2.6	.44	5.1	1.1	.01	.04
6	7.6	7.4	3.9	4.1	1.9	1.7	2.3	.48	3.4	1.2	.01	.06
7	6.8	6.0	3.6	3.9	1.7	1.7	1.9	.35	2.2	2.8	.01	1.6
8	6.2	5.3	3.7	3.8	1.7	1.7	2.2	.25	167	5.3	.01	2.6
9	5.9	5.1	3.9	3.8	1.9	1.8	2.0	.09	287	3.0	.01	33
10	5.9	4.8	4.2	4.5	2.1	1.7	1.6	3.6	114	1.3	.01	28
11	5.7	56	736	7.0	2.0	1.7	1.6	92	159	.78	.01	12
12	5.4	52	490	4.5	2.1	3.2	1.8	42	226	.57	.02	5.2
13	5.3	19	110	3.4	2.2	2.4	1.6	15	103	.57	.10	3.1
14	5.6	9.8	47	3.0	2.1	1.7	1.6	6.8	48	.54	.12	2.9
15	6.6	6.6	29	2.8	2.3	1.3	1.3	3.8	158	.51	.13	6.3
16	6.8	5.4	20	2.8	2.2	1.2	1.1	2.5	177	.48	.13	2.6
17	7.3	4.9	15	3.6	2.2	1.1	1.1	3.5	159	.45	.13	1.0
18	15	4.8	13	3.4	2.0	1.3	1.2	6.8	298	.24	.13	.24
19	10	4.7	12	3.2	1.8	1.3	1.1	2.8	244	.12	.13	.07
20	22	4.3	11	2.6	1.8	1.2	1.6	1.6	128	.07	.12	.04
21	20	4.9	9.6	2.6	1.6	1.3	1.5	1.1	67	.04	.12	.11
22	13	4.4	9.0	2.4	1.7	1.3	1.1	.93	88	.01	.89	3.7
23	11	4.3	8.4	2.4	1.7	1.7	.68	1.0	187	.01	18	2.5
24	14	4.4	7.8	2.6	1.5	1.8	.40	.93	61	.01	41	1.2
25	9.7	4.2	7.6	2.4	1.9	1.9	.36	.82	20	.01	22	.41
26	7.1	4.2	7.0	2.2	2.1	2.2	.33	1.3	9.7	.01	7.9	.07
27	5.9	4.9	7.2	2.2	2.1	2.4	.37	2.2	5.8	.01	24	.02
28	5.4	5.5	6.6	2.2	1.5	2.2	.39	16	4.1	.01	7.5	.01
29	5.4	4.8	6.0	2.1	---	2.3	.39	27	3.3	.01	3.2	.03
30	5.8	4.7	6.4	2.3	---	2.3	.35	9.2	2.6	.01	1.4	.02
31	6.2	---	5.7	2.1	---	2.3	---	9.9	---	.01	.61	---
TOTAL	394.9	735.4	1604.2	104.5	55.1	55.0	41.37	254.22	2848.0	26.27	127.74	107.79
MEAN	12.7	24.5	51.7	3.37	1.97	1.77	1.38	8.20	94.9	.85	4.12	3.59
MAX	90	279	736	7.0	2.4	3.2	2.6	92	298	5.3	41	33
MIN	5.3	4.2	3.6	2.1	1.5	1.1	.33	.09	2.2	.01	.01	.01
AC-FT	783	1460	3180	207	109	109	82	504	5650	52	253	214

CAL YR 1985 TOTAL 27670.85 MEAN 75.8 MAX 3150 MIN .54 AC-FT 54890
WTR YR 1986 TOTAL 6354.49 MEAN 17.4 MAX 736 MIN .01 AC-FT 12600

08165300 NORTH FORK GUADALUPE RIVER NEAR HUNT, TX

LOCATION.--Lat 30°03'36", long 99°23'40", Kerr County, Hydrologic Unit 12100201, on right bank 410 ft downstream from Ranch Road 1340, 1.3 mi downstream from Bear Creek, 3.7 mi west of Hunt, and 4.1 mi upstream from Honey Creek.

DRAINAGE AREA.--168 mi^2.

PERIOD OF RECORD.--August 1967 to current year.

REVISED RECORDS.--WRD TX-74-1: 1971(P).

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,800.10 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years, 41.0 ft^3/s (3.31 in/yr), 29,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,000 ft^3/s Oct. 19, 1985 (gage height, 29.81 ft, from rating curve extended above 170 ft^3/s on basis of slope-area measurements of 7,460 and 38,400 ft^3/s; minimum, 0.68 ft^3/s May 30, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 occurred July 1, 1932 (gage height, 37.3 ft), discharge 140,000 ft^3/s, by slope-area measurements, combined flow of North Fork Guadalupe River 5 mi upstream and Bear Creek 2 mi upstream from mouth, and adjusted for difference in drainage area.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	0745	*57,000	*29.81	Sept. 26	0900	33,700	25.32

Minimum daily discharge, 17 ft^3/s for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	53	37	28	24	17	21	19	30	19	18	26
2	25	55	32	28	24	19	20	18	28	18	22	25
3	24	49	32	28	35	21	20	18	27	22	22	24
4	24	47	32	28	34	22	21	18	26	28	25	23
5	23	47	33	27	29	18	21	18	25	26	23	22
6	22	45	32	27	27	18	20	18	25	24	20	31
7	22	45	32	27	26	20	19	20	27	23	19	34
8	23	44	32	30	26	20	21	19	26	23	19	32
9	23	43	32	29	25	20	27	23	25	23	18	29
10	23	43	32	28	25	21	24	28	25	23	17	27
11	23	42	34	27	24	22	23	26	25	22	17	26
12	23	42	34	27	23	21	22	22	25	21	18	26
13	23	40	32	27	23	19	21	21	24	22	19	26
14	25	40	31	27	22	19	20	20	23	24	18	25
15	29	42	31	27	22	19	20	20	23	23	19	25
16	25	41	30	27	21	19	20	20	22	22	22	24
17	24	38	30	26	21	19	22	20	26	21	22	23
18	24	38	32	26	21	19	22	20	26	20	22	22
19	14900	38	30	26	20	19	21	19	28	20	22	21
20	235	37	30	26	20	19	20	18	28	20	22	21
21	126	36	30	26	20	19	20	18	26	20	21	21
22	102	37	30	26	20	19	19	18	25	20	22	22
23	90	36	30	25	20	19	19	18	24	19	22	22
24	80	36	30	25	20	20	18	18	23	18	24	21
25	73	36	29	24	20	19	18	18	22	18	26	21
26	68	35	29	24	20	19	19	32	22	18	23	5030
27	64	37	29	24	20	19	19	37	21	17	23	128
28	61	36	29	24	17	19	18	34	20	17	23	67
29	58	35	29	24	---	20	18	34	19	17	24	57
30	57	37	29	24	---	21	19	32	19	17	24	52
31	54	---	29	24	---	20	---	31	---	17	24	---
TOTAL	16399	1230	963	816	649	605	612	695	735	642	660	5953
MEAN	529	41.0	31.1	26.3	23.2	19.5	20.4	22.4	24.5	20.7	21.3	198
MAX	14900	55	37	30	35	22	27	37	30	28	26	5030
MIN	22	35	29	24	17	17	18	18	19	17	17	21
CFSM	3.15	.24	.19	.16	.14	.12	.12	.13	.15	.12	.13	1.18
IN.	3.63	.27	.21	.18	.14	.13	.14	.15	.16	.14	.15	1.32
AC-FT	32530	2440	1910	1620	1290	1200	1210	1380	1460	1270	1310	11810

CAL YR 1985 TOTAL 31432 MEAN 86.1 MAX 14900 MIN 20 CFSM .51 IN. 6.96 AC-FT 62350
WTR YR 1986 TOTAL 29959 MEAN 82.1 MAX 14900 MIN 17 CFSM .49 IN. 6.63 AC-FT 59420

08165500 GUADALUPE RIVER AT HUNT, TX

LOCATION.--Lat 30°04'08", long 99°19'23", Kerr County, Hydrologic Unit 12100201, on right bank 56 ft upstream and 137 ft right of right end of bridge on State Highway 39, 0.6 mi downstream from confluence of North and South Forks, 0.8 mi east of Hunt, and at mile 430.9.

DRAINAGE AREA.--288 mi^2.

PERIOD OF RECORD.--October 1941 to September 1949, discharge not computed above 600 ft^3/s, and April 1965 to current year. Occasional discharge measurements made 1950-64.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,722.7 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: May 31 to June 11. Records good except those for estimated daily discharges, which are poor. There are numerous diversions for irrigation above station, but amounts are unknown. Gage-height telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--21 years, 74.8 ft^3/s (3.53 in/yr), 54,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,900 ft^3/s Aug. 2, 1978 (gage height, 23.5 ft, from floodmark), from rating curve extended above 3,700 ft^3/s on basis of channel geometry and flow-over-dam measurement of peak flow; minimum, 6.9 ft^3/s June 17, 1948.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 36.6 ft July 2, 1932, from information by local resident (discharge, 206,000 ft^3/s, determined by slope-area measurement 4.5 mi downstream from gage).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	0900	*56,800	*22.80	Sept. 6	0345	1,270	6.01
May 9	1815	1,020	5.28	Sept. 26	0430	36,700	a19.86

a From floodmark.

Minimum daily discharge, 27 ft^3/s Apr. 23 (result of pumping).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	118	64	56	53	43	41	36	70	44	41	49
2	44	120	62	56	52	41	41	33	65	42	35	49
3	42	107	63	56	95	44	41	34	60	43	32	44
4	41	101	62	55	97	52	42	35	60	42	35	41
5	39	99	62	54	79	46	41	47	55	41	39	42
6	36	95	61	53	69	40	40	40	55	41	38	251
7	37	94	61	53	65	40	40	35	80	39	36	90
8	37	91	61	60	63	42	42	35	70	38	36	71
9	37	87	61	65	62	44	62	168	65	38	33	62
10	37	85	62	64	61	48	56	116	60	38	34	56
11	37	81	77	60	59	46	50	78	58	38	35	54
12	37	80	71	56	55	46	48	73	58	38	34	51
13	37	78	66	56	55	43	55	64	58	39	35	51
14	41	76	64	54	54	43	39	56	54	41	35	51
15	59	75	61	54	54	39	38	46	52	41	34	50
16	47	75	61	54	55	38	38	51	52	39	34	49
17	42	71	61	54	54	38	37	52	57	38	34	48
18	41	68	61	54	51	39	41	50	55	36	34	46
19	17500	66	61	51	50	39	41	50	68	36	33	45
20	664	65	60	49	49	38	39	50	61	36	31	45
21	338	65	57	49	44	38	38	50	56	36	31	46
22	259	65	58	49	44	38	33	50	53	35	34	45
23	224	65	58	49	45	39	27	50	53	33	36	45
24	200	64	58	49	45	39	31	50	51	31	39	44
25	190	63	58	49	44	38	32	50	51	33	42	43
26	173	63	58	49	44	33	33	50	50	34	40	5810
27	158	69	57	48	45	36	35	54	49	34	38	259
28	148	74	57	48	44	40	35	68	47	35	38	168
29	138	68	58	48	---	39	34	68	45	33	39	142
30	127	68	58	48	---	39	34	80	46	33	39	128
31	123	---	58	48	---	40	---	75	---	39	39	---
TOTAL	20983	2396	1897	1648	1587	1268	1204	1794	1714	1164	1113	7975
MEAN	677	79.9	61.2	53.2	56.7	40.9	40.1	57.9	57.1	37.5	35.9	266
MAX	17500	120	77	65	97	52	62	168	80	44	42	5810
MIN	36	63	57	48	44	33	27	33	45	31	31	41
CFSM	2.35	.28	.21	.18	.20	.14	.14	.20	.20	.13	.12	.92
IN.	2.71	.31	.25	.21	.20	.16	.16	.23	.22	.15	.14	1.03
AC-FT	41620	4750	3760	3270	3150	2520	2390	3560	3400	2310	2210	15820

CAL YR 1985 TOTAL 48592 MEAN 133 MAX 17500 MIN 31 CFSM .46 IN. 6.28 AC-FT 96380
WTR YR 1986 TOTAL 44743 MEAN 123 MAX 17500 MIN 27 CFSM .43 IN. 5.78 AC-FT 88750

08166000 JOHNSON CREEK NEAR INGRAM, TX

LOCATION.--Lat 30°06'00", long 99°16'58", Kerr County, Hydrologic Unit 12100201, on right bank 1.6 mi upstream from Henderson Branch, 3.4 mi northwest of Ingram, 3.8 mi upstream from mouth, and 9.2 mi northwest of Kerrville.

DRAINAGE AREA.--114 mi^2.

PERIOD OF RECORD.--September 1941 to November 1959, October 1961 to current year.

REVISED RECORDS.--WSP 1058: 1942-45. WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,721.30 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. There are numerous small diversions above station for irrigation. Several observations of water temperature wer made during the year.

AVERAGE DISCHARGE.--43 years (water years 1942-59, 1962-86), 20.8 ft^3/s (2.48 in/yr), 15,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,900 ft^3/s Oct. 4, 1959 (gage height, 24.25 ft), from rating curve extended above 4,400 ft^3/s on basis of slope-area measurements of 9,100 and 16,000 ft^3/s and conveyance study; minimum daily, 0.4 ft^3/s July 26, 27, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 35 ft July 2, 1932, from information by local resident; discharge, 138,000 ft^3/s, by slope-area measurement at point 0.5 mi downstream from State fish hatchery and 6 or 7 mi upstream from gage. Flood of June 14, 1935, reached a stage of 31 or 32 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	0800	*45,000	[a]*17.16	June 12	2000	1,070	4.20
May 26	0830	1,160	4.35	Sept. 26	0915	1,470	4.83

[a] From floodmarks.

Minimum daily discharge, 5.8 ft^3/s July 19 (result of pumping).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	44	22	21	20	18	18	11	32	22	11	35
2	17	46	21	22	20	20	17	9.8	31	21	11	36
3	18	43	19	22	60	21	16	9.2	28	21	10	32
4	14	41	20	24	76	18	16	10	28	20	19	30
5	13	38	21	21	35	17	17	12	25	19	18	28
6	15	35	21	21	26	18	16	12	24	19	15	70
7	16	34	22	20	26	19	17	12	87	20	15	59
8	19	35	22	26	25	22	26	11	61	20	15	90
9	18	34	26	25	25	22	40	43	52	17	15	38
10	17	33	26	23	22	21	45	52	43	17	14	29
11	16	33	34	22	22	22	31	30	50	17	13	25
12	13	33	24	21	22	20	22	20	159	19	17	24
13	12	34	21	21	22	18	20	18	131	17	21	28
14	21	35	23	22	22	18	17	20	72	18	22	25
15	76	33	24	23	22	18	7.0	21	57	20	18	23
16	33	33	23	23	22	18	12	20	50	18	14	24
17	24	33	24	22	22	21	15	15	56	15	15	30
18	23	33	22	20	21	17	18	11	45	13	16	27
19	9960	31	21	18	21	14	18	9.2	51	5.8	14	26
20	133	26	21	18	21	14	14	9.2	42	11	12	24
21	93	26	20	19	21	8.1	13	11	36	13	15	24
22	83	27	21	19	22	10	14	11	33	12	28	24
23	76	26	22	20	21	15	14	11	32	12	32	23
24	71	27	22	21	21	16	18	11	30	12	38	22
25	68	30	21	20	20	13	18	8.7	30	12	42	22
26	65	29	21	18	20	15	17	195	25	12	35	253
27	59	34	21	18	19	15	13	83	24	12	33	71
28	56	30	21	19	17	15	12	55	24	12	35	34
29	55	26	21	17	---	16	11	38	24	11	37	27
30	48	26	21	17	---	16	9.4	33	24	10	35	23
31	45	---	20	19	---	18	---	33	---	11	32	---
TOTAL	11195	988	688	642	713	533.1	541.4	845.1	1406	478.8	667	1226
MEAN	361	32.9	22.2	20.7	25.5	17.2	18.0	27.3	46.9	15.4	21.5	40.9
MAX	9960	46	34	26	76	22	45	195	159	22	42	253
MIN	12	26	19	17	17	8.1	7.0	8.7	24	5.8	10	22
CFSM	3.17	.29	.19	.18	.22	.15	.16	.24	.41	.14	.19	.36
IN.	3.65	.32	.22	.21	.23	.17	.18	.28	.46	.16	.22	.40
AC-FT	22210	1960	1360	1270	1410	1060	1070	1680	2790	950	1320	2430

CAL YR 1985 TOTAL 20721.9 MEAN 56.8 MAX 9960 MIN 8.9 CFSM .50 IN. 6.76 AC-FT 41100
WTR YR 1986 TOTAL 19923.4 MEAN 54.6 MAX 9960 MIN 5.8 CFSM .48 IN. 6.50 AC-FT 39520

08166140 GUADALUPE RIVER ABOVE BEAR CREEK AT KERRVILLE, TX

LOCATION.--Lat 30°04'10", long 99°11'42", Kerr County, Hydrologic Unit 12100201, on left bank 600 ft downstream from Goat Creek, 900 ft upstream from Bear Creek and Bear Creek Crossing, and 2.4 mi east of intersection of State Highways 27 and 39 in Ingram.

DRAINAGE AREA.--494 mi^2.

PERIOD OF RECORD.--April 1978 to June 1986 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,623.20 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 30 to Jan. 15, and May 8. Records good except those for estimated daily discharges, which are fair. Discharge not computed above 400 ft^3/s. Numerous diversions for irrigation above station, amounts unknown. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum stage, 32.79 ft Aug. 3 1978 (discharge not known); minimum daily discharge, 13 ft^3/s July 10, 14-18, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 34.1 ft July 2, 1932, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 22.57 ft Oct. 19 at 0800 hours (discharge unknown); minimum daily, 51 ft^3/s Apr. 28, May 1.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1985 TO JUNE 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	204	104	102	88	72	61	51	165			
2	75	208	99	102	93	72	63	52	---			
3	72	202	96	102	129	72	63	52	186			
4	69	161	96	102	203	72	63	52	159			
5	63	124	96	103	146	73	63	53	130			
6	62	118	94	103	141	72	63	55	112			
7	62	115	93	103	131	69	62	54	189			
8	62	116	93	103	127	68	62	54	178			
9	67	114	98	105	124	70	75	---	159			
10	69	113	102	105	117	70	91	---	136			
11	66	114	189	105	112	72	79	252	126			
12	62	111	143	105	107	73	74	226	---			
13	60	109	120	106	103	73	68	228	---			
14	66	108	112	106	100	72	68	159	---			
15	176	111	109	105	96	70	64	91	---			
16	110	112	109	103	95	67	59	82	---			
17	85	109	108	103	90	65	60	87	---			
18	81	106	106	101	87	64	61	79	---			
19	---	106	106	96	85	62	61	70	---			
20	---	102	105	96	85	61	59	63	---			
21	352	98	103	95	80	61	59	61	---			
22	315	98	108	94	79	56	58	57	---			
23	289	100	111	93	78	58	56	55	---			
24	273	102	111	93	76	61	53	55	---			
25	262	101	109	91	76	60	53	52	---			
26	253	102	108	88	74	59	53	---	---			
27	248	126	106	88	75	58	52	249	---			
28	239	122	105	87	73	56	51	218	---			
29	256	107	102	88	---	58	52	188	---			
30	274	104	101	86	---	59	52	174	---			
31	249	---	101	87	---	60	---	177	---			
TOTAL	---	3623	3343	3046	2870	2035	1858	---	---			
MEAN	---	121	108	98.3	103	65.6	61.9	---	---			
MAX	---	208	189	106	203	73	91	---	---			
MIN	---	98	93	86	73	56	51	---	---			
AC-FT	---	7190	6630	6040	5690	4040	3690	---	---			

CAL YR 1985 TOTAL ---- MEAN ---- MAX ---- MIN ---- AC-FT ----
WTR YR 1986 TOTAL ---- MEAN ---- MAX ---- MIN ---- AC-FT ----

08167000 GUADALUPE RIVER AT COMFORT, TX

LOCATION.--Lat 29°58'10", long 98°53'33", Kendall County, Hydrologic Unit 12100201, on right bank at downstream side of southbound bridge on Interstate Highway 10 at Comfort, 0.5 mi downstream from Cypress Creek, and at mile 396.2.

DRAINAGE AREA.--839 mi^2.

PERIOD OF RECORD.--May 1939 to current year.

REVISED RECORDS.--WSP 1632: 1958. WSP 1732: 1939(M). WSP 2123: Drainage area, 1944(M), 1952(M), 1957(M), 1960(M).

GAGE.--Water-stage recorder. Datum of gage is 1,371.83 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 27, 1939, nonrecording gage. Nov. 27, 1939, to June 2, 1980, water-stage recorder at site 0.4 mi upstream at datum 0.22 ft higher.

REMARKS.--Estimated daily discharges: Oct. 19-21 and Jan. 30 to Feb. 25. Records good except for estimated daily discharges, which are poor. Many small diversions above station for irrigation. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--47 years (water years 1940-86), 190 ft^3/s (137,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 240,000 ft^3/s Aug. 2, 1978 (gage height, 40.90 ft), from high-water mark in well, from rating curve extended above 74,000 ft^3/s on basis of current-meter measurement of 124,000 ft^3/s at gage height 32.47 ft and slope-area measurement of 182,000 ft^3/s at gage height 38.4 ft, made at former gaging station "near Comfort" 5 mi upstream; no flow at times in 1952-57, 1963-64. All stages are at site and datum then in use.

Maximum stage since at least 1848, that of Aug. 2, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1869 reached a stage of 40.3 ft, from report by U.S. Army Corps of Engineers. Flood of July 1, 1932, reached a stage of 38.4 ft, from floodmark, and from information by State Department of Highways and Public Transportation. Flood of July 16, 1900, reached about the same stage as that of July 1, 1932, from information by local residents. All stages are at site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	Unknown	*73,700	a*27.50	Sept. 26	1800	21,800	16.14
Sept. 6	1100	5,200	8.14				

a From floodmark.

Minimum daily discharge, 61 ft^3/s Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	283	244	209	195	172	122	126	380	208	76	107
2	124	290	223	188	480	170	130	114	1120	204	75	113
3	120	280	241	154	1190	173	128	112	778	197	73	112
4	118	269	258	163	450	163	136	112	496	190	73	109
5	112	246	239	181	350	125	134	108	416	184	72	99
6	108	292	232	188	330	140	129	112	366	177	78	1630
7	104	265	230	165	330	131	128	130	427	174	83	572
8	99	241	230	229	320	166	132	215	438	171	76	379
9	90	238	229	272	310	161	151	122	390	171	72	307
10	90	234	228	217	308	157	213	1300	345	166	69	235
11	99	598	416	211	300	114	183	416	343	163	69	199
12	102	380	294	237	295	85	163	290	403	156	71	275
13	95	300	280	235	290	77	147	228	570	147	74	219
14	80	271	268	183	280	77	133	204	413	160	74	179
15	124	252	262	193	265	125	124	199	325	160	74	168
16	130	246	255	200	265	141	120	182	289	153	71	155
17	132	240	248	223	270	139	114	140	396	143	70	146
18	132	239	242	217	245	142	118	100	486	134	69	137
19	25700	231	237	250	230	143	119	128	487	138	68	132
20	31400	223	236	231	228	132	116	128	422	137	65	127
21	11300	219	239	178	220	130	110	118	361	124	64	126
22	1000	222	240	146	210	130	106	112	321	118	61	126
23	579	217	237	160	220	124	98	110	296	111	64	123
24	498	214	236	211	218	121	96	108	285	107	72	120
25	443	208	224	233	218	123	94	108	275	101	86	119
26	403	215	210	213	212	123	93	207	266	98	93	4570
27	372	367	223	178	207	123	92	717	246	91	88	1310
28	343	282	221	163	190	121	96	480	237	92	83	429
29	319	269	219	182	---	116	96	359	226	88	78	316
30	304	261	216	180	---	119	105	293	216	85	81	239
31	291	---	214	180	---	122	---	438	---	80	85	---
TOTAL	74942	8092	7571	6170	8626	4085	3726	7516	12019	4428	2307	12878
MEAN	2417	270	244	199	308	132	124	242	401	143	74.4	429
MAX	31400	598	416	272	1190	173	213	1300	1120	208	93	4570
MIN	80	208	210	146	190	77	92	100	216	80	61	99
AC-FT	148600	16050	15020	12240	17110	8100	7390	14910	23840	8780	4580	25540

CAL YR 1985 TOTAL 165720 MEAN 454 MAX 31400 MIN 40 AC-FT 328700
WTR YR 1986 TOTAL 152360 MEAN 417 MAX 31400 MIN 61 AC-FT 302200

08167500 GUADALUPE RIVER NEAR SPRING BRANCH, TX

LOCATION.--Lat 29°23'00", long 98°23'00", Comal County, Hydrologic Unit 12100201, at downstream side of bridge on Ranch Road 311, 1.9 mi southeast of Spring Branch Post Office, 7.5 mi downstream from Curry Creek, and at mile 334.4.

DRAINAGE AREA.--1,315 mi^2.

PERIOD OF RECORD.--June 1922 to current year.
Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WSP 1562: 1923-24, 1926, 1927-28(M), 1929, 1930(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 948.10 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 14, 1981, at site 220 ft downstream at same datum.

REMARKS.--Estimated daily discharges: May 9-11. Records good. Several small diversions above station for irrigation. Satellite telemeter at station.

AVERAGE DISCHARGE.--64 years, 314 ft^3/s (227,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 160,000 ft^3/s Aug. 3, 1978 (gage height, 45.25 ft, from floodmark), from rating curve extended above 55,600 ft^3/s on basis of slope-area measurement of peak flow; no flow at times in 1951-52, 1954-56, and 1963-64.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1859, about 53 ft in 1869; flood in July 1900 reached a stage of about 49 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 20	0600	*55,500	*32.06	Sept. 6	2100	10,100	13.98
Sept. 6	1000	11,500	15.12	Sept. 27	1400	11,300	14.98

Minimum daily discharge, 106 ft^3/s Aug. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	267	483	648	467	315	367	233	178	1080	387	142	180
2	214	520	597	461	340	361	236	183	904	370	138	279
3	193	510	557	443	649	352	240	177	1910	357	131	201
4	180	468	566	412	1790	375	244	171	1080	345	135	174
5	171	449	556	385	710	348	246	173	802	332	132	169
6	163	429	537	397	603	319	246	173	667	322	131	4990
7	159	444	527	407	550	302	240	170	821	305	129	2680
8	157	430	516	393	571	309	235	178	731	295	136	731
9	155	407	512	435	550	326	239	390	711	287	133	515
10	150	396	506	479	534	327	272	230	649	280	128	426
11	138	388	1210	428	514	320	295	1900	590	277	125	355
12	142	674	1050	408	499	302	290	475	1170	270	146	748
13	145	520	790	435	490	263	270	375	938	267	128	470
14	144	445	712	422	490	245	249	318	854	263	136	390
15	411	418	680	370	480	242	227	298	654	260	127	328
16	306	405	670	370	440	252	216	285	564	266	125	295
17	245	393	652	371	466	281	215	277	526	259	123	276
18	227	388	631	375	448	283	215	258	936	247	119	261
19	387	383	608	369	409	277	218	208	898	234	116	250
20	27600	372	595	387	396	273	214	200	802	226	111	247
21	2720	364	576	375	380	263	207	208	692	226	110	240
22	1580	366	573	334	369	258	200	200	616	220	107	230
23	1160	366	567	315	364	255	190	190	563	208	106	226
24	939	387	550	293	380	254	184	183	523	199	108	222
25	806	381	529	338	373	246	176	185	502	189	112	215
26	735	369	517	353	378	247	172	436	485	182	125	211
27	674	1320	516	353	399	246	173	999	466	173	133	4620
28	606	1010	512	346	380	244	174	797	439	165	136	1070
29	548	747	503	313	---	238	173	581	422	157	147	559
30	520	687	488	319	---	234	174	457	407	152	131	431
31	501	---	477	306	---	235	---	1110	---	148	124	---
TOTAL	42343	14919	18928	11859	14267	8844	6663	11963	22402	7868	3930	21989
MEAN	1366	497	611	383	510	285	222	386	747	254	127	733
MAX	27600	1320	1210	479	1790	375	295	1900	1910	387	147	4990
MIN	138	364	477	293	315	234	172	170	407	148	106	169
AC-FT	83990	29590	37540	23520	28300	17540	13220	23730	44430	15610	7800	43620

CAL YR 1985 TOTAL 249203 MEAN 683 MAX 27600 MIN 85 AC-FT 494300
WTR YR 1986 TOTAL 185975 MEAN 510 MAX 27600 MIN 106 AC-FT 368900

08167700 CANYON LAKE NEAR NEW BRAUNFELS, TX

LOCATION.--Lat 29°52'07", long 98°11'55", Comal County, Hydrologic Unit 12100201, in intake structure of Canyon Dam on Guadalupe River, 12 mi northwest of New Braunfels, and at mile 303.0.

DRAINAGE AREA.--1,432 mi².

PERIOD OF RECORD.--July 1962 to current year. Prior to October 1970, published as Canyon Reservoir.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 24, 1964, nonrecording gage at present site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 6,830 ft long, consisting of the main dam 4,410 ft long, an earthen dike 210 ft long, a 1,260-foot-long uncontrolled broad-crested-type spillway, and a 950-foot concrete and earthen nonoverflow section. Deliberate impoundment began June 16, 1964, and main part of dam was completed in August 1964. The flood-control outlet works consist of a 10.0-foot-diameter conduit controlled by two 5.7 by 10.0-foot hydraulically operated slide gates. The lake was built for water conservation and flood control. Capacity table beginning Oct. 1, 1974, is based on a sedimentation survey of August 1972. Small diversions above the lake for irrigation. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	974.0	-
Crest of spillway..	943.0	736,700
Top of conservation pool..	909.0	382,000
Lowest gated outlet (invert)......................................	775.0	240

COOPERATION.--Records furnished by the U.S. Army Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 588,400 acre-ft Aug. 4, 1978 (elevation, 930.61 ft); minimum observed since conservation pool first reached in April 1968, 311,200 acre-ft Nov. 24, 1984 (elevation, 899.85 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 429,900 acre-ft Oct. 13 at 1400 hours (elevation, 914.60 ft); minimum daily, 371,200 acre-ft May 8 at 0100 hours (elevation, 907.68 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

907.0	365,800	911.0	398,700	915.0	433,500
909.0	382,000	913.0	415,900		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	375500	401600	390800	384800	377000	378200	375500	372400	386600	389800	376800	371900
2	375100	400700	390900	384300	377100	378200	375300	372400	387600	388900	376300	372000
3	374800	399600	391200	383600	379500	379200	375200	372100	390100	388100	376100	372100
4	374300	398600	391500	382700	382700	379200	375200	372000	391600	387400	375900	372100
5	373800	397400	391500	382000	383600	379200	375000	372000	391900	386600	375600	372100
6	373300	396300	391500	381500	383800	379100	375100	371900	392000	386000	375500	382700
7	372900	395100	391700	381100	383800	379000	375000	371700	393400	385200	375400	388300
8	372800	394000	391700	381100	383700	378800	374800	372600	393700	384600	375100	389500
9	372800	392900	391700	380800	383600	378800	375100	376400	393900	383900	374900	389600
10	373000	391800	391900	380800	383400	378900	374900	378500	393900	383300	374700	389000
11	373200	390600	392300	380500	383100	378900	375000	380200	393800	383000	374500	388700
12	373200	390300	393100	380400	382700	378800	374900	380800	395400	382700	374500	392300
13	373200	389400	393000	380100	382500	378600	374800	381100	396000	382400	374200	393000
14	373700	388400	392700	379900	382400	378400	374600	381500	396500	382200	374000	392800
15	374900	387400	392500	379600	382100	378100	374200	381700	396300	382200	373800	392000
16	375100	386100	392300	379400	381900	377800	374000	381300	396300	381900	373600	391100
17	375100	385000	392100	379400	381800	377700	373900	382100	395900	381700	373500	390000
18	375100	384100	391800	379000	381400	377700	373700	381800	396300	381300	373300	389000
19	375500	383300	391300	378700	381100	377400	373600	381300	396500	381100	373200	387900
20	423400	382500	391000	378600	380700	377100	373300	380800	396700	380800	373200	387100
21	427600	382000	390600	378400	380200	376900	372900	380300	396500	380500	373200	386200
22	429600	381700	390200	378100	379500	376800	372700	379900	396300	380200	372900	385100
23	426800	381300	389900	377900	379000	376600	372400	379500	395900	379800	372800	383600
24	419100	382500	389300	377700	378600	376400	372400	379000	395400	379400	372800	382100
25	411200	382700	388600	377700	378400	376300	372200	378700	394800	379000	372600	381000
26	407300	383300	388200	377600	378500	376200	372200	379500	394100	378600	372500	380800
27	406400	387200	387600	377400	378500	376200	372100	381000	393400	378100	372400	387600
28	405600	388700	387100	377400	378400	376100	372000	381800	392700	377800	372500	389400
29	404500	389700	386600	377200	---	375800	372000	382000	391700	377600	372400	389600
30	403200	390500	386100	377200	---	375800	372000	382700	390700	377300	372000	388600
31	401900	---	385500	377000	---	375500	---	385000	---	377000	371700	---
MAX	429600	401600	393100	384800	383800	379200	375500	385000	396700	389800	376800	393000
MIN	372800	381300	385500	377000	377000	375500	372000	371700	386600	377000	371700	371900
(†)	911.37	910.02	909.42	908.39	908.56	908.21	907.78	909.36	910.05	908.39	907.74	909.80
(‡)	+26400	-11400	-5000	-8500	+1400	-2900	-3500	+13000	+5700	-13700	-5300	+16900

CAL YR 1985 MAX 429600 MIN 327200 (‡) +71400
WTR YR 1986 MAX 429600 MIN 371700 (‡) +13100

(†) Elevation, in feet, at end of month.
(‡) Change in contents, in acre-feet.

08167800 GUADALUPE RIVER AT SATTLER, TX

LOCATION.--Lat 29°51'32", long 98°10'47", Comal County, Hydrologic Unit 12100202, on right bank 200 ft upstream from Horseshoe Falls, 0.8 mi north of Sattler, 1.8 mi downstream from Canyon Dam, 2.3 mi upstream from Heiser Hollow, 11.2 mi north of New Braunfels, and at mile 301.2.

DRAINAGE AREA.--1,436 mi^2, of which 1,432 mi^2 is above Canyon Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1960 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 742.24 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated since July 21, 1962, by Canyon Lake (station 08167700) 1.8 mi upstream. Small diversions above station for irrigation. Satellite telemeter at station.

AVERAGE DISCHARGE.--24 years (water years 1962-86) since regulation began at Canyon Lake, 391 ft^3/s (283,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,800 ft^3/s Oct. 29, 1960 (gage height, 12.20 ft). Maximum discharge since closure of Canyon Dam on July 21, 1962, 5,850 ft^3/s Aug. 5, 1978 (gage height, 8.31 ft); no flow July 31 to Aug. 6, 1962 (result of closure of Canyon Dam), and part of Jan. 29, 30, Feb. 1, 1965 (result of closure while constructing present control).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1869 (stage unknown) has not been exceeded since that date; flood in July 1900 (stage unknown) exceeded 39 ft; maximum stage since at least 1904, 39 ft in July 1932 and June 1935, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,110 ft^3/s Oct. 24 at 1400 hours (gage height, 8.10 ft); minimum daily, 122 ft^3/s Aug. 25-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	258	926	551	763	395	370	296	206	574	795	206	188
2	341	926	549	763	395	370	296	206	574	791	206	191
3	341	926	549	763	397	375	296	206	674	694	203	144
4	341	926	549	763	400	374	296	206	730	615	171	172
5	341	926	549	763	400	374	296	206	776	614	143	179
6	341	926	544	642	487	374	296	206	781	614	143	182
7	341	926	542	541	642	374	296	206	784	614	143	183
8	233	926	542	536	642	374	296	206	791	614	143	184
9	148	926	621	536	642	374	296	207	791	578	143	479
10	148	926	729	536	637	374	296	209	800	481	143	746
11	148	926	755	536	631	374	296	209	800	366	143	756
12	148	926	755	536	628	374	296	209	800	309	143	485
13	148	926	755	536	628	374	296	209	800	306	143	209
14	148	926	755	536	628	374	296	209	800	304	143	548
15	152	936	755	536	628	374	296	331	800	304	143	772
16	188	936	755	536	628	374	296	426	792	304	142	772
17	281	936	755	542	628	374	296	434	795	304	141	772
18	283	936	755	542	628	374	296	437	792	304	132	765
19	285	763	755	542	628	353	296	437	791	304	124	763
20	287	608	755	542	630	301	296	437	791	304	124	763
21	287	607	755	542	630	300	296	437	791	304	124	763
22	446	568	755	472	628	300	245	437	791	304	124	853
23	2570	536	755	406	628	300	206	437	791	304	124	930
24	5060	549	755	395	628	300	206	437	791	304	123	936
25	5050	558	755	395	481	300	206	437	791	302	122	600
26	2910	549	755	395	371	300	206	438	795	300	122	322
27	926	585	755	395	370	300	206	432	800	300	122	322
28	926	567	755	395	370	300	206	478	800	250	122	322
29	926	557	759	395	---	300	185	568	800	206	136	563
30	926	555	763	395	---	296	204	570	800	206	182	772
31	926	---	763	395	---	296	---	574	---	206	186	---
TOTAL	25854	23710	21600	16570	15428	10671	8086	10647	23166	12505	4509	15636
MEAN	834	790	697	535	551	344	270	343	773	403	145	521
MAX	5060	936	763	763	642	375	296	574	800	795	206	936
MIN	148	536	542	395	370	296	185	206	574	206	122	144
AC-FT	51280	47030	42840	32870	30600	21170	16040	21120	45990	24800	8940	31010

CAL YR 1985 TOTAL 233952 MEAN 641 MAX 5060 MIN 142 AC-FT 464000
WTR YR 1986 TOTAL 188402 MEAN 516 MAX 5060 MIN 122 AC-FT 373700

08167800 GUADALUPE RIVER AT SATTLER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1984 to current year.

INSTRUMENTATION.--Since June 1984 water temperature is recorded continuously at this station.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 22.0°C Sept. 25, 1985, Oct. 13, 18, 23, 1986.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 22.0°C Oct. 13, 18, 23.

TEMPERATURF, WATER (DEG. C), WATER YEAR OCTOBER 1924 TO SEPTEMBER 1985

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.5	16.5	18.0	15.0	14.5	15.0	15.5	13.5	14.0	14.0	13.5	14.0
2	19.5	18.0	18.5	15.0	14.5	15.0	15.5	14.0	14.5	14.0	13.5	14.0
3	20.0	18.5	19.0	15.0	14.5	14.5	14.5	13.5	14.0	14.5	14.0	14.0
4	19.5	18.0	18.5	15.5	14.5	15.0	14.0	13.5	14.0	14.5	14.0	14.0
5	20.5	18.0	19.0	15.0	14.5	15.0	14.5	13.5	14.0	14.0	14.0	14.0
6	21.5	20.0	20.5	15.5	14.5	15.0	14.5	13.5	14.0	14.0	13.5	14.0
7	21.0	19.5	20.0	15.0	14.5	14.5	14.5	13.0	13.5	14.0	13.5	13.5
8	20.0	17.0	19.0	15.5	14.5	15.0	15.0	13.5	14.0	14.0	13.5	13.5
9	17.0	14.5	15.5	15.5	14.5	15.0	15.5	14.0	14.5	14.0	13.5	13.5
10	16.0	14.0	15.0	15.5	14.0	14.5	15.5	13.5	14.0	13.5	13.5	13.5
11	16.0	14.5	14.5	15.0	13.5	14.0	15.0	14.0	14.5	13.5	13.0	13.5
12	16.0	14.0	15.0	15.5	13.5	14.0	14.5	14.0	14.0	13.0	12.5	13.0
13	16.0	14.5	15.0	15.5	13.5	14.5	15.0	14.0	14.5	13.0	12.5	12.5
14	16.0	14.0	15.0	15.5	14.5	15.0	15.0	14.0	14.5	12.5	12.0	12.5
15	16.0	13.5	15.0	15.5	14.5	15.0	15.0	14.0	14.5	12.0	12.0	12.0
16	15.5	14.5	15.0	15.0	14.5	14.5	14.5	13.5	14.0	12.0	11.5	11.5
17	15.5	13.5	14.5	15.0	14.5	14.5	14.5	14.0	14.0	12.0	11.5	11.5
18	16.0	14.0	15.0	15.5	14.0	14.5	14.5	14.0	14.0	12.0	11.5	11.5
19	15.5	14.0	14.5	15.0	14.0	14.0	14.5	14.0	14.0	11.5	11.0	11.5
20	15.5	14.0	14.5	14.0	14.0	14.0	14.5	14.0	14.0	11.5	11.0	11.0
21	14.5	14.0	14.0	15.0	13.5	14.0	14.5	14.0	14.0	11.5	11.0	11.0
22	---	---	---	15.0	13.5	14.0	14.0	13.5	14.0	11.0	11.0	11.0
23	---	---	---	14.5	13.5	14.0	14.0	14.0	14.0	11.0	10.5	11.0
24	14.0	14.0	14.0	15.0	14.0	14.5	14.5	13.5	14.0	11.0	10.5	11.0
25	14.0	14.0	14.0	15.5	14.0	14.5	14.0	13.5	14.0	11.0	10.5	10.5
26	14.5	14.0	14.0	15.5	14.0	14.5	14.0	13.5	14.0	10.5	10.0	10.5
27	14.5	14.0	14.0	14.5	13.5	14.0	14.0	14.0	14.0	10.5	10.0	10.5
28	15.0	14.0	14.0	15.0	13.5	14.0	14.5	14.0	14.0	10.5	10.0	10.5
29	15.0	14.0	14.5	15.5	13.5	14.5	14.5	14.0	14.0	---	---	---
30	15.0	14.0	14.5	15.5	13.5	14.0	14.5	14.0	14.0	---	---	---
31	15.0	14.5	14.5	---	---	---	14.5	14.0	14.0	---	---	---
MONTH	21.5	13.5	16.0	15.5	13.5	14.5	15.5	13.0	14.0	14.5	10.0	12.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1				---	---	---	12.0	11.0	11.5	---	---	---
2				---	---	---	12.0	11.0	11.5	---	---	---
3				---	---	---	12.5	11.0	11.5	---	---	---
4				---	---	---	12.0	11.0	11.5	---	---	---
5				---	---	---	13.0	11.0	11.5	---	---	---
6				---	---	---	12.5	11.5	11.5	---	---	---
7				---	---	---	12.0	11.5	11.5	---	---	---
8				10.5	9.5	10.0	12.0	11.5	11.5	---	---	---
9				10.0	9.5	10.0	12.0	11.5	12.0	---	---	---
10				10.5	9.5	10.0	12.0	11.5	12.0	---	---	---
11				11.0	10.0	10.0	12.5	11.5	12.0	---	---	---
12				10.5	10.0	10.0	12.5	12.0	12.0	---	---	---
13				10.5	10.0	10.0	12.5	12.0	12.0	---	---	---
14				11.0	10.0	10.5	13.0	12.0	12.5	---	---	---
15				10.0	10.0	10.0	13.0	12.0	12.5	---	---	---
16				10.5	10.0	10.0	13.5	12.0	12.5	---	---	---
17				10.5	10.0	10.0	13.0	12.0	12.5	---	---	---
18				10.5	10.0	10.0	13.5	12.0	12.5	---	---	---
19				10.5	10.0	10.5	13.0	12.5	12.5	---	---	---
20				11.5	10.0	10.5	13.5	12.5	13.0	15.0	14.0	14.5
21				11.5	10.5	11.0	13.5	12.5	13.0	15.0	14.0	14.5
22				11.0	10.0	10.5	13.5	12.5	13.0	15.0	14.0	14.5
23				11.5	10.5	11.0	14.0	12.5	13.0	15.0	14.0	14.5
24				11.5	10.5	10.5	---	---	---	15.0	14.0	14.5
25				11.5	10.5	11.0	---	---	---	15.5	14.0	14.5
26				11.0	10.5	11.0	---	---	---	15.5	14.5	15.0
27				11.0	10.5	11.0	---	---	---	15.0	14.5	15.0
28				11.5	11.0	11.0	---	---	---	15.5	14.5	15.0
29				11.0	11.0	11.0	---	---	---	15.5	14.5	15.0
30				12.5	11.0	11.5	---	---	---	15.5	14.5	15.0
31				11.5	10.5	11.0	---	---	---	15.5	14.5	15.0
MONTH				12.5	9.5	10.5	14.0	11.0	12.0	15.5	14.0	15.0

08167800 GUADALUPE RIVER AT SATTLER, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.0	15.0	15.0	17.0	16.5	17.0	19.5	19.0	19.0	21.0	19.0	20.0
2	15.5	15.0	15.0	17.5	16.5	17.0	19.5	19.0	19.0	21.0	19.0	20.0
3	15.5	15.0	15.5	17.5	16.5	17.0	20.0	19.0	19.0	21.5	19.0	20.0
4	16.0	15.0	15.5	17.5	16.5	17.0	20.0	19.0	19.5	21.0	19.0	20.0
5	15.5	15.0	15.5	18.0	17.0	17.0	20.0	19.0	19.5	21.0	19.5	20.0
6	---	---	---	18.0	17.0	17.0	20.0	19.0	19.5	21.0	19.0	20.0
7	---	---	---	18.0	17.0	17.0	20.0	18.5	19.5	21.5	19.5	20.0
8	16.5	15.5	15.5	17.5	17.0	17.0	20.0	18.5	19.0	21.5	19.0	20.0
9	16.5	15.5	15.5	18.0	17.0	17.5	20.0	18.5	19.0	21.0	19.5	20.0
10	16.5	15.5	15.5	18.0	17.0	17.5	20.0	18.5	19.0	21.0	19.5	20.0
11	16.5	15.5	15.5	18.0	17.0	17.5	20.0	18.5	19.0	21.5	19.5	20.0
12	16.0	15.5	15.5	18.0	17.5	17.5	20.0	18.5	19.0	20.5	19.5	20.0
13	16.0	15.5	15.5	18.0	17.5	17.5	20.0	18.5	19.0	20.5	19.5	20.0
14	16.5	15.5	15.5	18.0	17.5	17.5	20.0	18.5	19.0	21.5	19.5	20.0
15	16.5	15.5	16.0	18.0	17.5	18.0	20.0	18.5	19.0	20.5	19.5	20.0
16	16.5	15.5	16.0	18.5	17.5	18.0	---	---	---	21.0	19.5	20.0
17	16.5	15.5	16.0	18.5	17.5	18.0	20.0	18.5	19.0	21.0	19.5	20.0
18	16.5	15.5	16.0	18.5	17.5	18.0	20.5	18.5	19.5	21.0	20.0	20.5
19	16.5	15.5	16.0	18.5	17.5	18.0	20.5	18.5	19.5	21.5	20.0	20.5
20	16.5	15.5	16.0	18.5	18.0	18.0	20.5	18.5	19.5	21.5	20.0	20.5
21	16.5	15.5	16.0	18.5	18.0	18.0	20.5	19.0	19.5	21.0	20.0	20.5
22	16.0	16.0	16.0	19.0	18.0	18.5	20.5	19.0	19.5	21.5	20.0	20.5
23	17.0	16.0	16.5	19.0	18.0	18.5	20.5	19.0	19.5	21.5	20.0	20.5
24	17.0	16.0	16.0	19.0	18.0	18.5	20.5	19.0	19.5	21.5	19.5	20.0
25	17.0	16.0	16.5	19.0	18.0	18.5	20.5	19.0	19.5	22.0	20.0	20.5
26	17.0	16.0	16.5	19.0	18.5	18.5	21.0	19.0	19.5	21.0	19.5	20.0
27	17.0	16.0	16.5	19.0	18.5	18.5	20.5	19.0	19.5	21.5	19.0	20.0
28	17.0	16.0	16.5	19.0	18.5	18.5	21.0	19.0	19.5	20.5	20.0	20.0
29	17.0	16.0	16.5	19.5	18.5	19.0	20.5	19.0	19.5	20.5	19.5	20.0
30	17.0	16.5	16.5	19.5	18.5	19.0	21.0	19.0	19.5	20.5	19.0	19.5
31	---	---	---	19.5	18.5	19.0	21.0	19.0	19.5	---	---	---
MONTH	17.0	15.0	16.0	19.5	16.5	18.0	21.0	18.5	19.5	22.0	19.0	20.0
YEAR	22.0	9.5	15.5									

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.0	19.0	20.0	21.0	20.5	21.0	18.5	18.0	18.0	---	---	---
2	21.5	20.0	20.5	21.0	20.5	20.5	18.0	17.5	17.5	---	---	---
3	21.5	20.0	20.5	21.0	20.5	20.5	17.5	17.5	17.5	---	---	---
4	21.5	20.5	21.0	20.5	20.0	20.5	18.0	17.0	17.5	---	---	---
5	21.5	20.5	20.5	20.5	20.0	20.0	17.5	17.0	17.0	---	---	---
6	21.5	20.0	20.5	20.5	20.0	20.0	17.0	16.5	16.5	---	---	---
7	21.5	20.5	21.0	20.0	19.5	20.0	---	---	---	---	---	---
8	21.5	20.5	21.0	20.0	19.5	20.0	---	---	---	---	---	---
9	21.5	20.5	20.5	20.0	19.5	19.5	---	---	---	---	---	---
10	21.5	20.5	21.0	20.0	19.5	19.5	---	---	---	---	---	---
11	21.5	20.5	21.0	19.5	19.5	19.5	---	---	---	---	---	---
12	21.5	20.5	21.0	19.5	19.0	19.5	---	---	---	---	---	---
13	22.0	20.5	21.0	19.5	19.0	19.5	---	---	---	---	---	---
14	21.5	20.5	21.0	19.5	19.0	19.0	---	---	---	---	---	---
15	20.5	20.5	20.5	19.0	19.0	19.0	---	---	---	---	---	---
16	21.0	20.0	20.5	19.0	19.0	19.0	---	---	---	---	---	---
17	21.5	20.5	21.0	19.0	19.0	19.0	---	---	---	---	---	---
18	22.0	21.0	21.0	19.5	19.0	19.0	---	---	---	---	---	---
19	21.0	21.0	21.0	19.0	18.5	19.0	---	---	---	---	---	---
20	21.5	21.0	21.0	19.0	18.5	18.5	---	---	---	---	---	---
21	21.0	21.0	21.0	19.0	18.5	18.5	---	---	---	12.0	11.5	11.5
22	---	21.0	21.0	19.0	18.5	18.5	---	---	---	11.5	11.5	11.5
23	22.0	21.0	21.5	19.0	18.5	18.5	---	---	---	12.0	11.0	11.5
24	21.5	21.5	21.5	19.0	18.5	18.5	---	---	---	11.5	11.0	11.5
25	21.5	21.5	21.5	19.0	18.5	19.0	---	---	---	12.0	11.0	11.5
26	21.5	20.5	21.0	19.0	18.5	19.0	---	---	---	12.0	11.0	11.5
27	21.0	20.5	21.0	19.0	18.5	18.5	---	---	---	12.0	11.0	11.0
28	21.0	20.5	21.0	18.5	18.0	18.5	---	---	---	12.0	11.0	11.5
29	21.5	21.0	21.0	18.5	18.0	18.5	---	---	---	12.5	11.0	11.5
30	21.5	21.0	21.0	19.0	18.5	18.5	---	---	---	12.0	11.0	11.5
31	21.5	21.0	21.0	---	---	---	---	---	---	12.0	11.5	11.5
MONTH	22.0	19.0	21.0	21.0	18.0	19.5	18.5	16.5	17.5	12.5	11.0	11.5

08167800 GUADALUPE RIVER AT SATTLER, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.0	11.5	12.0	12.5	11.0	11.5	13.0	12.5	13.0	14.5	13.0	13.5
2	12.0	11.5	12.0	13.0	11.5	12.0	14.0	12.5	13.0	14.0	13.0	13.5
3	12.0	11.5	11.5	13.0	11.5	12.0	13.0	12.5	13.0	14.0	13.0	13.5
4	12.5	11.5	12.0	13.0	11.5	12.0	13.5	12.5	13.0	13.5	13.0	13.0
5	12.0	11.5	11.5	13.0	11.5	12.0	13.5	12.5	13.0	14.5	13.0	13.5
6	12.5	11.0	11.5	13.0	11.5	12.0	13.0	12.5	13.0	14.5	13.0	13.5
7	12.0	11.5	11.5	13.0	11.5	12.0	13.5	12.5	13.0	14.0	13.0	13.5
8	12.0	11.5	11.5	13.0	12.0	12.0	14.0	12.5	13.0	14.5	13.0	13.5
9	11.5	11.5	11.5	13.0	12.0	12.5	13.0	12.5	12.5	14.0	13.5	13.5
10	12.0	11.5	11.5	13.5	12.0	12.5	13.0	12.5	12.5	14.5	13.0	13.5
11	12.0	11.5	11.5	12.5	12.0	12.0	13.5	12.5	13.0	15.5	13.0	14.0
12	12.0	11.5	11.5	13.0	12.0	12.5	14.5	12.5	13.0	15.0	13.0	14.0
13	12.0	11.5	11.5	12.5	11.5	12.0	14.5	12.5	13.0	15.0	13.0	14.0
14	12.5	11.5	12.0	13.0	11.5	12.0	14.0	12.5	13.0	14.0	13.5	13.5
15	12.5	11.5	12.0	13.0	12.0	12.5	14.0	12.5	13.0	14.0	13.5	13.5
16	12.5	11.5	12.0	13.5	11.5	12.5	14.0	12.5	13.0	14.0	13.5	13.5
17	12.5	11.5	12.0	13.0	12.0	12.5	13.5	12.5	13.0	14.5	13.5	13.5
18	12.5	11.5	12.0	13.5	12.0	12.5	13.0	13.0	13.0	14.5	13.0	13.5
19	12.5	11.5	12.0	13.0	12.0	12.5	13.5	13.0	13.0	14.5	13.0	13.5
20	12.5	11.5	12.0	13.5	11.5	12.5	14.0	12.5	13.0	14.5	13.0	13.5
21	12.5	11.5	11.5	13.5	11.5	12.5	14.5	12.5	13.0	14.5	13.5	14.0
22	12.5	11.5	11.5	14.0	11.5	12.5	14.5	12.5	13.5	15.0	13.5	14.0
23	12.5	11.5	11.5	14.0	12.0	12.5	15.0	12.5	13.5	14.5	13.5	14.0
24	12.5	11.5	12.0	14.0	12.0	12.5	13.5	13.0	13.0	14.5	13.5	14.0
25	13.0	11.5	12.0	14.0	12.0	12.5	14.0	12.5	13.5	14.5	13.5	14.0
26	13.0	11.5	12.0	14.0	12.0	13.0	14.5	13.0	13.5	14.5	13.5	14.0
27	13.0	11.5	12.0	14.0	12.0	12.5	14.0	13.0	13.5	14.5	13.5	14.0
28	12.5	11.5	12.0	14.0	12.0	13.0	15.0	13.0	13.5	14.5	13.5	14.0
29	---	---	---	14.0	12.0	13.0	14.5	13.0	13.5	14.5	13.5	14.0
30	---	---	---	14.0	12.5	13.0	14.0	13.0	13.5	14.0	13.5	14.0
31	---	---	---	13.5	12.5	12.5	---	---	---	14.5	14.0	14.0
MONTH	13.0	11.0	12.0	14.0	11.0	12.5	15.0	12.5	13.0	15.5	13.0	13.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	14.5	14.0	14.0	16.5	15.5	16.0	18.5	16.0	17.0	18.5	17.0	17.5
2	14.5	14.0	14.0	16.5	15.5	16.0	18.5	16.0	17.0	18.5	17.0	17.5
3	14.5	14.0	14.0	16.5	15.5	16.0	18.0	16.0	17.0	20.0	17.0	18.0
4	15.0	14.0	14.0	16.5	15.5	16.0	17.5	16.0	16.5	18.5	17.0	17.5
5	14.5	14.0	14.5	16.5	15.5	16.0	18.5	16.0	17.0	18.5	17.0	17.5
6	---	---	---	16.5	15.5	16.0	18.5	16.0	17.0	17.5	17.0	17.5
7	---	---	---	16.5	15.5	16.0	19.0	16.5	17.0	18.0	17.0	17.5
8	15.0	14.0	14.5	16.5	15.5	16.0	19.0	16.0	17.0	18.5	17.0	17.5
9	15.0	14.0	14.5	16.5	16.0	16.0	18.5	16.5	17.0	18.5	17.0	18.0
10	15.0	14.0	14.5	17.0	15.5	16.0	19.0	16.5	17.0	19.0	18.0	18.5
11	15.0	14.5	14.5	17.0	16.0	16.0	19.0	16.5	17.0	19.0	18.0	18.5
12	15.0	14.0	14.5	17.0	15.5	16.0	18.0	16.0	17.0	19.5	17.5	18.5
13	15.0	14.0	14.5	17.0	15.5	16.0	19.0	16.0	17.0	19.5	17.5	18.0
14	15.0	14.5	14.5	17.0	15.5	16.0	19.0	16.5	17.5	19.0	17.5	18.0
15	15.0	14.5	14.5	17.0	15.5	16.0	19.0	16.5	17.5	19.0	18.5	18.5
16	15.0	14.5	15.0	17.0	15.5	16.0	18.5	16.5	17.5	19.0	18.5	18.5
17	15.0	14.5	14.5	17.5	15.5	16.0	19.0	16.5	17.5	19.0	18.5	19.0
18	15.5	14.5	15.0	17.5	15.5	16.0	19.5	16.5	17.5	19.5	18.5	19.0
19	15.5	14.5	15.0	17.5	15.5	16.0	19.5	16.5	17.5	19.5	18.5	19.0
20	15.5	14.5	15.0	17.0	15.5	16.0	19.0	16.5	17.5	19.5	19.0	19.0
21	15.5	14.5	15.0	17.0	15.5	16.5	18.0	16.5	17.0	19.5	19.0	19.0
22	15.5	15.0	15.0	17.5	15.5	16.5	18.0	16.5	17.0	19.5	19.0	19.0
23	15.5	15.0	15.0	17.5	16.0	16.5	18.0	16.5	17.0	19.5	19.0	19.5
24	15.5	15.0	15.0	17.5	16.0	16.5	19.0	16.5	17.5	20.0	19.0	19.5
25	15.5	15.0	15.5	17.5	16.0	16.5	18.5	16.5	17.5	19.5	18.5	19.5
26	16.0	15.0	15.5	17.5	16.0	16.5	19.0	16.5	17.5	20.0	18.5	19.0
27	16.0	15.0	15.5	17.5	16.0	16.5	19.5	16.5	17.5	20.0	18.5	19.0
28	16.0	15.5	15.5	18.0	16.0	17.0	18.5	16.5	17.5	19.5	18.5	19.0
29	16.0	15.5	15.5	18.0	16.0	16.5	18.5	17.0	17.5	20.0	19.0	19.5
30	16.0	15.5	15.5	18.0	16.0	17.0	18.5	16.5	17.5	20.0	19.5	19.5
31	---	---	---	18.0	16.0	17.0	19.0	17.0	17.5	---	---	---
MONTH	16.0	14.0	15.0	18.0	15.5	16.0	19.5	16.0	17.0	20.0	17.0	18.5

08168500 GUADALUPE RIVER ABOVE COMAL RIVER AT NEW BRAUNFELS, TX

LOCATION.--Lat 29°42'53", long 98°06'35", Comal County, Hydrologic Unit 12100202, on right bank at New Braunfels, 1.1 mi upstream from Comal River, 21.9 mi downstream from Canyon Lake, and at mile 281.1.

DRAINAGE AREA.--1,518 mi².

PERIOD OF RECORD.--December 1927 to current year.

REVISED RECORDS.--WSP 898: 1935. WSP 1562: 1932. WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 586.65 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Small diversions for irrigation below station 08167800 and above this station. Since July 21, 1962, flow is largely regulated by Canyon Lake (station 08167700) 21.9 mi upstream. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--34 years (water years 1929-62) prior to regulation by Canyon Lake, 372 ft³/s (269,500 acre-ft/yr); 24 years (water years 1963-86) regulated, 480 ft³/s (347,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 101,000 ft³/s June 15, 1935 (gage height, 32.95 ft); no flow July 8, 9, July 17 to Aug. 20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1845, 38 ft July 8, 1869, and in December 1913, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,600 ft³/s Nov. 24 at 0700 hours (gage height, 10.20 ft); minimum daily discharge, 167 ft³/s Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	277	1130	885	1000	466	456	351	246	918	946	292	242
2	426	1160	834	998	466	458	351	230	824	947	291	246
3	422	1140	817	991	504	489	345	228	851	885	287	224
4	422	1140	799	990	565	469	345	226	1250	737	280	191
5	418	1130	779	980	539	458	345	228	1170	732	220	229
6	421	1130	766	912	538	458	345	223	1120	729	218	243
7	426	1130	760	689	789	455	338	223	1100	729	217	254
8	400	1120	755	691	790	457	335	229	1120	725	212	243
9	230	1130	792	688	784	458	340	225	1090	709	212	336
10	222	1140	965	681	781	453	333	280	1070	615	209	813
11	218	1140	1030	678	775	451	331	247	1080	512	208	880
12	215	1140	1020	678	770	452	330	234	1110	417	206	857
13	212	1140	1010	678	769	450	325	229	1110	411	201	288
14	211	1140	1000	678	765	445	323	237	1070	408	196	423
15	307	1140	1000	678	760	445	318	280	1050	404	194	836
16	251	1130	1000	680	761	442	318	457	1040	403	193	842
17	360	1120	1000	695	760	442	323	476	1060	402	192	838
18	380	1130	1000	678	760	445	326	507	1040	400	190	837
19	387	994	996	678	760	435	325	480	1030	397	171	838
20	390	689	993	675	760	366	319	471	1020	394	170	844
21	407	688	995	670	759	358	318	466	1020	390	170	839
22	473	666	995	634	756	357	309	463	1020	388	170	907
23	1790	612	997	507	753	356	234	458	1000	387	172	1090
24	5410	2270	995	492	750	351	232	456	990	387	179	1100
25	5370	1180	991	487	677	351	229	450	985	386	178	915
26	4100	929	993	483	459	351	229	529	982	385	170	356
27	1160	1540	994	480	458	351	229	549	981	382	171	351
28	1140	1240	992	475	455	350	229	529	979	370	167	364
29	1140	1050	991	475	---	351	216	672	977	299	168	462
30	1130	955	991	466	---	351	225	721	964	298	215	836
31	1120	---	995	466	---	350	---	942	---	295	235	---
TOTAL	29835	33243	29130	21051	18929	12861	9116	12191	31021	15869	6354	17724
MEAN	962	1108	940	679	676	415	304	393	1034	512	205	591
MAX	5410	2270	1030	1000	790	489	351	942	1250	947	292	1100
MIN	211	612	755	466	455	350	216	223	824	295	167	191

CAL YR 1985 TOTAL 291473 MEAN 799 MAX 5410 MIN 196
WTR YR 1986 TOTAL 237324 MEAN 650 MAX 5410 MIN 167

08169000 COMAL RIVER AT NEW BRAUNFELS, TX

LOCATION.--Lat 29°42'21", long 98°07'20", Comal County, Hydrologic Unit 12100202, on right bank 200 ft upstream from San Antonio Street viaduct in New Braunfels and 1.1 mi upstream from mouth.

DRAINAGE AREA.--130 mi^2. Normal flow of river comes from springs; drainage area not applicable.

PERIOD OF RECORD.--1882 to current year (1882 to November 1927, discharge measurements only).

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Oct. 1, 1955. Datum of gage is 582.80 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. The flow from Comal Springs emerges from the Edwards and associated limestones in the Balcones Fault Zone. Except during periods of rainfall, flow of river is primarily from Comal Springs about 1.0 mi upstream. Flow is affected at times by cleanup operations by the city of New Braunfels at Landa Park Lake and at times by discharge from the flood-detention pools of five floodwater-retarding structures with a combined detention capacity of 17,580 acre-ft. These structures control runoff from 74.6 mi^2 above station. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--54 years (water years 1933-86), 294 ft^3/s (213,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,800 ft^3/s May 11, 1972 (gage height, 36.55 ft, from floodmark), from rating curve extended above 13,000 ft^3/s on basis of contracted-opening measurements on Blieders and Dry Comal Creeks and unit rainfall-runoff studies; no flow from Comal Springs from June 13 to Nov. 3, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information begins with flood of July 8, 1869, which reached a stage of 36.91 ft, from painted and dated marks in old Remmert Brewery 0.5 mi downstream; the flood of Oct. 17, 1870, reached a stage of 37.65 ft at same site (probably some backwater from Guadalupe River).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 24	0700	3,130	8.92	June 4	1000	*4,500	*10.82

Minimum daily discharge, 226 ft^3/s Aug. 19, 20, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	242	290	330	326	317	308	278	246	308	317	250	251
2	238	322	330	326	312	308	278	246	278	322	250	246
3	238	299	326	326	366	313	282	246	270	326	246	246
4	242	290	322	322	330	304	282	250	1900	317	250	242
5	238	290	322	326	322	304	270	246	400	317	246	246
6	242	290	322	322	322	304	278	242	322	317	246	246
7	242	286	322	322	322	304	278	242	317	317	250	262
8	242	286	322	326	317	304	274	246	312	308	242	258
9	246	290	322	326	322	304	278	242	322	308	246	254
10	246	294	322	322	322	299	274	238	308	312	242	254
11	246	294	326	322	322	304	278	242	312	299	242	316
12	246	294	326	322	326	304	274	246	322	308	234	278
13	246	290	326	317	326	304	274	242	312	308	244	258
14	252	290	326	322	326	294	270	250	317	308	246	262
15	336	294	326	326	326	304	266	258	312	299	234	262
16	266	294	322	327	322	294	266	242	312	299	238	258
17	258	294	326	365	317	294	266	242	312	308	238	258
18	258	299	326	330	312	299	266	242	322	290	238	262
19	294	294	326	326	317	299	266	246	340	294	226	262
20	304	294	330	322	312	294	266	242	322	290	226	266
21	286	294	330	322	312	290	262	246	326	290	230	266
22	282	294	326	317	308	286	254	238	322	282	226	262
23	282	294	330	317	312	290	250	234	322	278	234	262
24	282	1090	330	317	308	286	250	238	317	282	250	258
25	278	708	326	322	304	286	250	238	322	266	250	258
26	278	441	330	317	304	286	246	242	326	270	238	258
27	278	803	326	318	304	286	246	262	317	270	234	258
28	278	396	330	322	314	286	246	246	322	270	242	262
29	278	345	326	317	---	282	241	246	322	258	234	258
30	278	335	327	312	---	282	242	392	325	258	242	258
31	278	---	326	317	---	286	---	682	---	254	242	---
TOTAL	8200	10874	10107	10021	8924	9188	7951	8160	11141	9142	7456	7787
MEAN	265	362	326	323	319	296	265	263	371	295	241	260
MAX	336	1090	330	365	366	313	282	682	1900	326	250	316
MIN	238	286	322	312	304	282	241	234	270	254	226	242

CAL YR 1985 TOTAL 97084 MEAN 266 MAX 1760 MIN 184
WTR YR 1986 TOTAL 108951 MEAN 298 MAX 1900 MIN 226

08169580 GUADALUPE RIVER BELOW NEW BRAUNFELS, TX

LOCATION.--Lat 29°40'00", long 98°04'14", Comal County, Hydrologic Unit 12100202, in Lake Dunlap, 8 mi southeast of New Braunfels, and 15 mi downstream from Interstate Highway 35 bridge.

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: June 1986.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3
OCT									
29...	1103	373	7.80	20.0	7.8	89	--	180	14
NOV									
27...	0930	443	7.70	20.5	7.4	84	--	220	23
MAR									
05...	0930	481	7.80	18.0	8.1	87	1.1	230	25
APR									
29...	1040	507	7.90	24.0	7.2	88	1.8	240	28
JUN									
25...	1705	463	7.80	23.5	8.3	100	0.5	220	17
AUG									
13...	1620	449	8.10	29.0	13.4	--	5.6	210	17

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT									
29...	52	11	8.0	0.3	2.9	161	16	12	0.2
NOV									
27...	64	14	11	0.3	2.2	194	20	16	0.2
MAR									
05...	67	16	12	0.4	1.7	208	18	20	0.3
APR									
29...	71	16	13	0.4	1.9	215	25	21	0.2
JUN									
25...	62	15	9.9	0.3	1.9	200	21	12	0.2
AUG									
13...	56	16	9.8	0.3	1.7	189	21	18	0.2

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
OCT									
29...	10	210	0.75	0.05	0.80	0.10	0.3	0.4	0.06
NOV									
27...	11	250	0.89	0.01	0.90	0.09	0.41	0.5	0.05
MAR									
05...	9.4	270	0.99	0.01	1.00	0.06	0.34	0.4	0.06
APR									
29...	11	290	1.08	0.02	1.10	0.07	0.43	0.5	0.10
JUN									
25...	9.9	250	--	<0.01	0.80	0.06	0.24	0.3	0.04
AUG									
13...	11	250	0.47	0.03	0.50	0.02	0.88	0.9	0.05

08170000 SAN MARCOS RIVER SPRINGFLOW AT SAN MARCOS, TX

LOCATION.--Lat 29°52'06", long 97°55'38", Hays County, Hydrologic Unit 12100203, on left bank 0.7 mi downstream from bridge on Interstate Highway 35 and U.S. Highway 81, 1.2 mi southeast of courthouse in San Marcos, and 2.1 mi upstream from Blanco River.

DRAINAGE AREA.--93.0 mi^2. Normal flow of river comes from springs, drainage area of stream not applicable.

PERIOD OF RECORD.--May 1956 to current year. June 1915 to January 1916, March 1916 to September 1921, and May to September 1956, published as San Marcos River at San Marcos; records include some surface runoff. Periodic measurements of springflow were made at this location outside period of records since Nov. 14, 1894, and are published as miscellaneous measurements.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 536.82 ft above National Geodetic Vertical Datum of 1929. June 10, 1915, to Jan. 19, 1916, nonrecording gage at site 1.2 mi upstream, and Mar. 13, 1916, to Sept. 7, 1921, water-stage recorder near present site, datum relations unknown.

REMARKS.--Estimated daily discharges: Oct. 18 to Nov. 5. Records good except those for estimated discharges, which are fair. Flow is slightly regualted by utilites dam about 1.5 mi upstream. Flow is affected at times by discharge from the flood-detention pool of one floodwater-retarding structure with a detention capacity of 8,580 acre-ft. This structure controls runoff from 33.6 mi^2. Entire flow of river is from San Marcos springs, about 1.8 mi upstream, except during periods of local runoff. San Marcos springs emerge from the Edwards and associated limestones in the Balcones Fault Zone. There is a small diversion for operation of State fish hatchery, some of which is returned above gage. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--30 years (water years 1957-86), 165 ft^3/s (119,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily spring discharge (estimated), 350 ft^3/s June 20, 1981; maximum discharge, 76,600 ft^3/s May 15, 1970 (gage height, 35.12 ft); minimum daily spring discharge, 46 ft^3/s Aug. 15, 16, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1913, 38.6 ft Sept. 10, 1921 (from floodmark, backwater from Blanco River), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum daily spring discharge, 316 ft^3/s Nov. 27; maximum gage height, 24.30 ft Oct. 24 at 0800 hours (flood runoff); minimum daily spring discharge, 156 ft^3/s Apr. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	169	e158	254	236	204	195	168	e168	230	248	220	e191
2	169	e158	250	233	202	197	167	164	224	248	217	e191
3	169	e158	251	232	e205	198	169	160	224	245	215	189
4	168	e159	251	231	e218	197	168	159	e240	244	213	190
5	168	e160	250	230	216	197	168	159	e244	244	212	187
6	168	e163	247	228	e209	196	167	158	240	244	212	e190
7	167	163	248	230	206	195	168	158	e244	243	211	e199
8	164	164	248	232	204	e197	167	e162	253	241	209	193
9	162	164	248	230	202	199	e168	e163	e261	239	209	190
10	163	163	e251	227	201	196	168	e205	254	240	e210	188
11	160	e164	e257	227	199	e194	167	e212	250	239	e215	e186
12	158	166	e257	224	197	192	168	201	e250	238	212	e191
13	e157	164	252	223	196	191	167	195	e257	237	208	e195
14	e157	163	250	224	197	190	166	e191	254	236	208	185
15	e174	163	248	223	196	189	166	e194	253	e234	205	183
16	168	163	247	e223	199	186	163	189	251	237	206	181
17	163	164	246	e227	197	186	e164	e199	e257	237	206	180
18	e160	162	244	221	196	e186	164	e226	e257	235	205	179
19	e159	162	243	217	195	184	164	210	e263	234	203	174
20	e159	159	241	213	196	183	164	e208	e258	233	200	175
21	e158	159	241	212	195	182	160	206	258	233	200	e183
22	e158	158	e243	210	196	180	159	204	257	231	200	184
23	e158	e162	244	209	196	180	157	202	254	229	204	180
24	e158	e230	242	209	196	179	156	201	253	228	e200	179
25	e158	e242	240	209	197	179	e157	199	251	228	198	178
26	e158	219	238	206	197	179	157	e200	252	227	198	178
27	e158	e316	238	206	195	177	159	e201	251	227	197	178
28	e158	e294	238	206	195	175	157	200	252	224	195	177
29	e158	263	236	205	---	172	158	199	251	223	193	175
30	e158	259	236	204	---	168	159	e208	248	223	191	174
31	e158	---	236	204	---	168	---	e230	---	222	191	---
TOTAL	5020	5542	7615	6811	5602	5787	4910	5931	7491	7291	6363	5523
MEAN	162	185	246	220	200	187	164	191	250	235	205	184
MAX	174	316	257	236	218	199	169	230	263	248	220	199
MIN	157	158	236	204	195	168	156	158	224	222	191	174
CFSM	1.74	1.99	2.65	2.37	2.15	2.01	1.76	2.05	2.69	2.53	2.20	1.98
IN.	2.01	2.22	3.05	2.72	2.24	2.31	1.96	2.37	3.00	2.92	2.55	2.21
AC-FT	9960	10990	15100	13510	11110	11480	9740	11760	14860	14460	12620	10950

CAL YR 1985 TOTAL 66562 MEAN 182 MAX 316 MIN 120 CFSM 1.96 IN. 26.62 AC-FT 132000
WTR YR 1986 TOTAL 73886 MEAN 202 MAX 316 MIN 156 CFSM 2.17 IN. 29.55 AC-FT 146600

e Discharge estimated.

08171000 BLANCO RIVER AT WIMBERLEY, TX

LOCATION.--Lat 29 59'39", long 98 05'19", Hays County, Hydrologic Unit 12100203, on left bank at downstream side of highway, near left end of bridge on Ranch Road 12, 0.3 mi southeast of Wimberley, 2,200 ft downstream from Cypress Creek, and at mile 29.0.

DRAINAGE AREA.--355 mi².

PERIOD OF RECORD.--August 1924 to September 1926, June 1928 to current year.

REVISED RECORDS.--WSP 1562: 1929, 1930-31(M), 1935-36(M), 1938(M), 1941-42(M), 1947(M), 1949(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 797.23 ft above National Geodetic Vertical Datum of 1929. Aug. 6, 1924, to Sept. 30, 1926, nonrecording gage at site 1,030 ft upstream at datum 5.00 ft higher. Recording gage from June 6, 1928, to June 12, 1975, at site 1,000 ft upstream at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. There are many small diversions above stations. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--60 years (water years 1925-26, 1929-86), 124 ft³/s (4.74 in/yr), 89,840 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 113,000 ft³/s May 28, 1929 (gage height, 33.3 ft, from floodmark), present site and datum, from rating curve extended above 30,000 ft³/s on basis of slope-area measurements of 95,000 and 113,000 ft³/s; minimum, 0.6 ft³/s Aug. 16, 1956.

Maximum stage since at least 1869, that of May 28, 1929.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1869 reached a stage of 25 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 4	0030	3,280	7.82	Sept. 6	1430	*33,900	*20.39
May 9	2300	19,100	15.67	Sept. 12	0530	2,290	6.97

Minimum daily discharge, 47 ft³/s Oct. 11-13 and Aug. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	92	370	177	105	130	81	91	202	133	57	61
2	73	105	329	173	105	129	81	72	169	121	55	59
3	68	102	313	170	297	129	81	68	154	121	54	58
4	67	102	299	166	1050	129	81	66	169	119	54	56
5	59	100	275	156	334	129	81	66	178	114	54	56
6	51	97	259	149	260	129	78	66	170	108	54	6220
7	51	89	246	149	235	124	78	66	225	104	56	743
8	51	89	235	149	217	123	78	75	345	100	56	313
9	49	89	227	149	208	121	84	1820	275	98	56	221
10	48	87	240	149	207	118	79	3130	234	95	56	176
11	47	89	500	149	203	117	75	344	222	92	56	151
12	47	86	503	145	193	115	75	213	343	91	55	753
13	47	84	362	140	192	114	75	161	282	90	54	255
14	52	83	324	136	192	112	75	136	262	88	54	174
15	97	83	312	133	188	111	73	129	236	86	54	147
16	80	81	303	129	188	108	73	124	211	82	49	134
17	78	81	291	129	181	105	73	395	252	75	49	126
18	78	81	280	129	174	105	73	481	653	72	49	124
19	84	89	265	129	170	102	73	248	322	69	49	119
20	427	83	252	124	164	100	73	201	263	69	47	112
21	202	81	247	123	158	94	70	178	237	70	52	110
22	158	81	239	121	150	92	70	163	220	67	51	106
23	142	81	235	117	147	91	69	151	204	66	55	106
24	127	137	226	114	146	91	68	140	197	66	54	102
25	114	173	213	114	146	91	66	133	189	63	52	99
26	106	157	203	111	148	91	68	149	179	63	51	97
27	102	966	202	108	143	89	71	150	169	60	50	92
28	99	701	199	108	137	89	68	149	163	58	49	104
29	94	486	192	108	---	87	63	139	151	59	52	99
30	94	416	188	108	---	86	63	149	140	61	62	90
31	92	---	184	106	---	85	---	169	---	58	61	---
TOTAL	2957	5071	8513	4168	6038	3336	2216	9622	7016	2618	1657	11063
MEAN	95.4	169	275	134	216	108	73.9	310	234	84.5	53.5	369
MAX	427	966	503	177	1050	130	84	3130	653	133	62	6220
MIN	47	81	184	106	105	85	63	66	140	58	47	56
CFSM	.27	.48	.77	.38	.61	.30	.21	.87	.66	.24	.15	1.04
IN.	.31	.53	.89	.44	.63	.35	.23	1.01	.74	.27	.17	1.16
AC-FT	5870	10060	16890	8270	11980	6620	4400	19090	13920	5190	3290	21940

CAL YR 1985	TOTAL	90203	MEAN	247	MAX	14400	MIN	44	CFSM	.70	IN.	9.45	AC-FT	178900
WTR YR 1986	TOTAL	64275	MEAN	176	MAX	6220	MIN	47	CFSM	.50	IN.	6.74	AC-FT	127500

08171300 BLANCO RIVER NEAR KYLE, TX

LOCATION.--Lat 29 58'45", long 97 54'35", Hays County, Hydrologic Unit 12100203, on left bank 800 ft downstream from Tarbutton Ranch House (Hatchett Ranch), 2.2 mi southwest of Kyle, 4.2 mi downstream from Halifax Creek, and 6.3 mi upstream from bridge on U.S. Highway 81.

DRAINAGE AREA.--412 mi^2.

PERIOD OF RECORD.--May 1956 to current year.

REVISED RECORDS.--WSP 1923: 1957-58, 1960(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 620.12 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good. Small diversions above station for irrigation. Most of the low flow of the Blanco River enters the Edwards and associated limestones in the Balcones Fault Zone which crosses the basin upstream from this station and below the station at Wimberley. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--30 years, 147 ft^3/s (4.85 in/yr), 106,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,000 ft^3/s May 2, 1958 (gage height, 36.3 ft, from floodmark), from rating curve extended above 37,000 ft^3/s on basis of slope-area measurement of 139,000 ft^3/s and slope-conveyance study; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 40 ft in May 1929, from information by local residents (discharge, 139,000 ft^3/s). Flood of Sept. 11, 1952, reached a stage of 38.0 ft (discharge, 115,000 ft^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 4	0300	2,680	10.94	June 12	1700	3,650	12.05
May 10	0130	19,900	21.84	Sept. 6	unknown	*32,900	a*25.91

a From floodmark.

Minimum daily discharge, 26 ft^3/s Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	77	481	181	98	117	67	74	257	132	42	33
2	55	97	416	178	98	115	66	75	214	121	41	39
3	51	86	385	175	135	115	66	56	188	114	41	31
4	47	83	366	171	1070	115	67	53	209	108	40	31
5	41	80	340	162	347	113	66	54	218	102	41	32
6	39	79	316	158	257	111	65	53	203	97	40	5340
7	38	77	299	154	224	106	66	50	188	93	41	1770
8	37	76	285	158	207	105	65	59	402	89	38	301
9	37	74	273	157	199	103	65	423	342	85	38	201
10	37	74	276	159	197	102	76	5100	277	82	36	148
11	35	179	379	154	193	99	65	531	254	78	36	124
12	34	101	659	149	184	100	66	288	645	76	37	650
13	33	88	405	143	180	98	65	214	456	74	36	248
14	33	83	356	139	179	99	61	176	323	72	34	155
15	90	83	337	134	175	97	58	172	285	71	33	117
16	70	82	328	131	171	93	58	159	249	72	33	103
17	62	81	315	135	168	90	59	388	279	67	33	95
18	61	83	301	130	161	92	60	742	679	65	31	88
19	67	83	287	126	157	86	60	350	404	61	29	89
20	322	90	276	122	151	84	57	271	300	60	28	89
21	218	80	266	119	147	81	55	225	263	59	29	89
22	149	82	257	116	140	77	54	208	240	58	29	80
23	130	81	248	113	134	77	53	184	221	56	32	76
24	116	250	238	110	132	77	53	171	207	54	36	73
25	102	363	223	109	132	76	52	160	195	53	34	72
26	93	279	213	105	129	74	52	171	184	51	30	71
27	86	1190	210	102	127	73	54	181	171	50	28	69
28	82	1050	204	102	121	71	53	174	160	47	27	69
29	79	665	197	102	---	71	51	161	151	45	26	79
30	77	553	191	101	---	68	57	179	140	44	29	69
31	75	---	186	99	---	68	---	207	---	44	33	---
TOTAL	2453	6349	9513	4194	5613	2853	1812	11309	8304	2280	1061	10431
MEAN	79.1	212	307	135	200	92.0	60.4	365	277	73.5	34.2	348
MAX	322	1190	659	181	1070	117	76	5100	679	132	42	5340
MIN	33	74	186	99	98	68	51	50	140	44	26	31
CFSM	.19	.51	.75	.33	.49	.22	.15	.89	.67	.18	.08	.84
IN.	.22	.57	.86	.38	.51	.26	.16	1.02	.75	.21	.10	.94
AC-FT	4870	12590	18870	8320	11130	5660	3590	22430	16470	4520	2100	20690

CAL YR 1985 TOTAL 95502 MEAN 262 MAX 16200 MIN 28 CFSM .64 IN. 8.62 AC-FT 189400
WTR YR 1986 TOTAL 66172 MEAN 181 MAX 5340 MIN 26 CFSM .44 IN. 5.97 AC-FT 131300

08172000 SAN MARCOS RIVER AT LULING, TX

LOCATION.--Lat 29°39'54", long 97°38'59", Caldwell-Guadalupe County line, Hydrologic Unit 12100203, on left bank 390 ft downstream from bridge on State Highway 80, 1.0 mi south of U.S. Post Office at Luling, and 9.4 mi upstream from Plum Creek.

DRAINAGE AREA.--838 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1939 to current year.

REVISED RECORDS.--WSP 958: 1940. WSP 1312: 1940(M), 1945(M), 1947(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 322.05 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow is affected at times by discharge from the flood-detention pools of 18 floodwater-retarding structures with a combined detention capacity of 26,830 acre-ft. These structures control runoff from 105 mi² in the Town and York Creeks drainage basins. Satellite telemeter at station.

AVERAGE DISCHARGE.-47 years, 369 ft³/s (267,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,000 ft³/s Sept. 12, 1952 (gage height, 34.95 ft); minimum daily, 43 ft³/s Aug. 12, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1859, 40.4 ft in 1869 or 1870, from information by State Department of Highways and Public Transportation. Flood of May 29, 1929, reached a stage of 37.1 ft and is the second highest known.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 24	2200	*18,000	*31.24	May 11	0300	6,090	25.21
Nov. 27	1900	6,400	25.78	Sept. 7	1900	6,370	25.73

Minimum daily discharge, 179 ft³/s Aug. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	280	260	1260	522	352	344	253	238	1270	402	239	217
2	255	322	1120	515	348	340	251	285	778	391	236	238
3	236	315	1020	506	388	340	250	260	636	381	237	239
4	237	277	962	500	780	341	253	240	1140	369	241	228
5	226	263	914	487	1110	347	252	230	1580	359	240	234
6	223	258	863	474	687	350	252	221	890	352	242	231
7	218	258	814	469	568	343	252	221	754	344	277	3190
8	213	257	774	470	514	337	250	220	691	336	243	1430
9	213	253	747	479	492	337	263	426	750	330	246	620
10	211	253	729	476	477	332	276	1860	735	319	240	489
11	213	253	801	467	467	325	267	3390	626	313	249	414
12	210	334	901	462	458	328	265	865	571	308	255	451
13	204	305	1010	454	448	323	257	610	1100	304	241	891
14	206	280	841	448	444	340	253	508	812	299	233	525
15	390	272	783	437	440	319	245	480	660	295	230	419
16	296	275	744	444	438	310	238	439	594	299	225	358
17	260	271	722	1090	432	298	235	451	553	293	223	328
18	244	266	698	600	423	286	237	784	634	286	221	309
19	493	263	677	484	415	322	243	921	979	282	179	293
20	557	263	659	448	403	293	243	634	733	276	203	293
21	568	260	642	427	391	256	241	549	624	272	208	299
22	742	260	631	411	394	308	229	493	569	268	210	313
23	467	258	622	398	379	280	228	460	537	265	218	292
24	342	4410	610	394	367	276	225	426	514	260	226	274
25	314	6010	591	387	360	242	222	402	495	255	234	267
26	296	1660	575	379	364	267	219	393	479	252	225	259
27	278	4330	564	372	350	270	220	440	461	252	220	256
28	269	3760	559	364	350	269	221	419	443	250	216	254
29	261	1840	548	361	---	264	219	401	431	246	213	253
30	258	1430	539	358	---	261	223	525	419	243	208	255
31	256	---	532	356	---	253	---	1290	---	241	208	---
TOTAL	9436	29716	23452	14439	13039	9501	7282	19081	21458	9342	7086	14119
MEAN	304	991	757	466	466	306	243	616	715	301	229	471
MAX	742	6010	1260	1090	1110	350	276	3390	1580	402	277	3190
MIN	204	253	532	356	348	242	219	220	419	241	179	217
CFSM	.36	1.18	.90	.56	.56	.37	.29	.74	.85	.36	.27	.56
IN.	.42	1.32	1.04	.64	.58	.42	.32	.85	.95	.41	.31	.63
AC-FT	18720	58940	46520	28640	25860	18850	14440	37850	42560	18530	14060	28010

CAL YR 1985 TOTAL 217153 MEAN 595 MAX 15000 MIN 178 CFSM .71 IN. 9.64 AC-FT 430700
WTR YR 1986 TOTAL 177951 MEAN 488 MAX 6010 MIN 179 CFSM .58 IN. 7.90 AC-FT 353000

08172000 SAN MARCOS RIVER AT LULING, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1944 to February 1959, September 1961 to April 1966, November 1968 to current year. Pesticide analyses: June 1986. Sediment analyses: October 1960 to April 1966.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT									
17...	1610	233	621	8.10	23.0	290	45	85	18
NOV									
20...	1027	263	572	8.10	19.5	280	33	79	19
JAN									
14...	1517	446	602	8.30	14.0	280	38	82	19
FEB									
27...	0941	353	590	8.20	18.5	280	45	80	19
APR									
24...	1414	232	591	8.20	23.0	280	38	81	19
JUN									
19...	1043	1130	487	8.10	26.0	220	16	65	15
24...	1544	512	527	8.10	27.0	250	21	74	16
AUG									
11...	1415	241	567	7.90	28.0	270	62	76	19

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT									
17...	21	0.6	2.1	241	34	35	0.2	11	350
NOV									
20...	17	0.5	1.9	243	28	25	0.3	11	330
JAN									
14...	20	0.5	1.7	245	26	33	0.2	9.4	340
FEB									
27...	20	0.5	1.8	233	27	35	0.2	9.1	330
APR									
24...	19	0.5	1.7	243	33	35	0.2	10	340
JUN									
19...	13	0.4	2.4	208	23	16	0.2	10	270
24...	13	0.4	1.8	230	24	19	0.3	11	300
AUG									
11...	16	0.4	1.8	206	27	35	0.2	13	310

08172400 PLUM CREEK AT LOCKHART, TX

LOCATION.--Lat 29°55'22", long 97°40'44", Caldwell County, Hydrologic Unit 12100203, on right bank 548 ft upstream from bridge on U.S. Highway 183, 2.7 mi north of Lockhart, 3.7 mi upstream from Town Creek, 5.0 mi downstream from Brushy Creek, and 30.4 mi upstream from mouth.

DRAINAGE AREA.--112 mi².

PERIOD OF RECORD.--April 1959 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 431.19 ft above National Geodetic Vertical Datum of 1929. Apr. 30, 1959, to July 25, 1968, at site 548 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. No known diversion above station. Flow is affected at times by discharge from the flood-detention pools of 17 floodwater-retarding structures with a combined capacity of 24,850 acre-ft. These structures control runoff from 67.8 mi² above this station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--27 years, 47.5 ft³/s (34,410 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,700 ft³/s Nov. 24, 1985 (gage height, 20.89 ft); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, 22 ft in June 1936 at present site; flood in 1951 reached a stage of 20 ft at present site, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 24	0930	*27,700	*20.89	May 10	0630	7,350	16.69
Nov. 27	1330	4,320	15.80				

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	.00	496	11	6.2	3.1	2.8	.52	368	2.9	.00	.00
2	.61	.00	423	11	6.2	3.1	2.6	3.8	285	2.4	.00	.00
3	.18	.00	358	11	127	3.3	2.4	9.5	157	2.1	.00	.00
4	.07	.27	338	11	224	22	2.1	7.0	99	1.8	.00	.00
5	.01	.46	313	9.6	83	33	1.8	4.9	162	1.5	.00	.00
6	.00	.17	285	9.1	45	21	1.6	4.1	89	1.2	.00	.00
7	.00	.18	262	8.9	30	16	1.5	3.0	53	.98	.00	.00
8	.00	.18	233	9.7	21	13	1.3	48	106	.90	.00	.00
9	.00	.20	194	13	17	11	1.2	89	82	.84	.00	.00
10	.00	.21	147	13	15	9.0	1.1	3010	69	.71	.00	.00
11	.00	.28	284	12	12	7.7	1.2	704	46	.56	.00	.00
12	.00	.41	194	11	11	6.9	1.6	544	43	.44	.00	97
13	.00	.43	126	9.7	9.5	6.0	1.6	418	81	.25	.00	20
14	.00	.78	91	9.1	8.8	5.7	1.4	340	61	.13	.00	13
15	.00	1.0	72	8.6	8.3	5.3	1.0	291	39	.06	.00	4.5
16	.00	1.3	50	14	7.9	4.4	.79	224	25	.04	.00	1.3
17	.16	1.4	41	172	7.7	3.7	.58	210	166	.00	.00	.31
18	.12	1.3	33	42	7.0	3.7	.51	327	311	.00	.00	.10
19	.09	1.4	27	23	6.4	3.1	.46	211	297	.00	.00	.04
20	.80	1.4	20	17	5.7	2.7	.31	142	128	.00	.00	.00
21	1.1	1.4	18	15	5.2	2.3	.25	100	62	.00	.00	.74
22	1.6	1.0	17	12	4.6	2.0	.18	67	36	.00	.00	3.7
23	1.7	.99	16	11	4.2	1.8	.17	42	23	.00	.00	76
24	1.1	9700	15	9.7	3.9	1.6	.40	25	16	.00	.00	11
25	.41	1800	14	9.1	3.9	1.6	1.0	18	12	.00	.00	4.8
26	.16	853	13	8.2	3.8	1.5	.67	16	9.5	.00	.00	2.4
27	.07	3040	12	7.7	3.8	2.1	.42	16	7.4	.00	.00	1.2
28	.01	1050	12	7.3	3.4	4.3	.27	13	5.9	.00	.00	.55
29	.00	675	12	6.8	---	4.2	.15	9.3	4.5	.00	.00	.10
30	.00	576	11	6.6	---	3.6	.17	138	3.6	.00	.00	.02
31	.00	---	12	6.3	---	3.0	---	365	---	.00	.00	---
TOTAL	9.79	17708.76	4139	525.4	691.5	211.7	31.53	7400.12	2846.9	16.81	.00	236.76
MEAN	.32	590	134	16.9	24.7	6.83	1.05	239	94.9	.54	.00	7.89
MAX	1.7	9700	496	172	224	33	2.8	3010	368	2.9	.00	97
MIN	.00	.00	11	6.3	3.4	1.5	.15	.52	3.6	.00	.00	.00
AC-FT	19	35130	8210	1040	1370	420	63	14680	5650	33	.00	470

CAL YR 1985 TOTAL 37300.07 MEAN 102 MAX 9700 MIN .00 AC-FT 73980
WTR YR 1986 TOTAL 33818.27 MEAN 92.7 MAX 9700 MIN .00 AC-FT 67080

08173000 PLUM CREEK NEAR LULING, TX

LOCATION.--Lat 29°41'58", long 97 36'12", Caldwell County, Hydrologic Unit 12100203, near left bank at downstream side of pier of bridge on county road, 1.2 mi upstream from West Fork, 1.9 mi upstream from Southern Pacific Railroad Co. bridge, 2.2 mi upstream from McNeil Creek, 2.9 mi northeast of Luling, and at mile 7.5.

DRAINAGE AREA.--309 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to current year.

REVISED RECORDS.--WSP 1923: 1933. WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 321.57 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 18, 1976, at datum 5.0 ft higher.

REMARKS.--Estimated daily discharges: Nov. 8-13 and May 28-29. Records good except those for estimated daily discharges, which are fair. Low flow is slightly regulated by oilfield operations above station. At end of year, flow from 119 mi above this station was partly controlled by 27 floodwater-retarding structures with a combined detention capacity of 41,840 acre-ft. No other known diversion above station.

AVERAGE DISCHARGE.--56 years, 102 ft^3/s (73,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,500 ft^3/s July 1, 1936 (gage height, 30.7 ft, from floodmarks), present datum, from rating curve extended above 37,500 ft^3/s; no flow at times.
Maximum stage since at least 1868, that of July 1, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1913 reached about same stage as that of July 1, 1936, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 24	2300	*29,300	a*25.47	Nov. 28	0400	5,920	21.72

a From floodmark.

Minimum daily discharge, 2.9 ft^3/s Aug. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	8.1	760	49	39	24	18	31	616	17	5.7	4.1
2	13	15	666	50	39	24	18	60	394	15	5.7	9.1
3	8.8	22	571	48	45	25	18	27	239	15	5.7	6.5
4	7.1	12	515	48	809	70	18	29	213	14	5.4	4.7
5	5.9	9.4	487	45	274	101	18	26	170	13	5.7	4.3
6	5.2	8.5	449	43	148	76	17	22	164	12	5.4	4.9
7	5.1	8.3	411	42	110	54	17	20	121	12	5.8	11
8	5.0	7.8	369	43	82	43	17	18	199	11	5.6	7.8
9	5.0	7.4	328	51	69	37	18	110	189	11	5.4	6.7
10	5.6	7.0	277	55	63	33	21	802	143	11	4.9	6.4
11	5.3	10	322	50	53	29	19	1770	116	9.8	5.0	5.8
12	5.2	9.8	382	46	48	28	18	809	89	9.4	4.8	6.6
13	4.9	9.7	212	44	43	27	18	549	92	9.2	6.0	87
14	4.8	9.7	163	41	41	25	16	402	120	8.8	7.7	32
15	17	9.2	142	41	40	25	15	327	93	8.6	5.0	25
16	27	12	127	40	38	23	13	262	66	8.6	4.7	17
17	13	21	110	835	38	22	13	273	53	8.8	4.4	11
18	8.0	16	99	428	36	21	13	959	271	8.9	4.3	8.7
19	11	14	89	148	34	20	13	465	448	8.4	3.7	7.8
20	17	14	80	107	33	19	13	219	201	8.2	3.1	7.4
21	52	15	70	88	30	18	13	170	130	7.8	2.9	6.9
22	94	11	66	74	27	18	12	141	89	6.9	2.9	7.8
23	89	11	66	64	26	17	12	116	64	6.7	3.2	43
24	31	4890	64	58	26	17	11	88	47	6.5	3.7	52
25	17	11800	59	55	25	17	11	67	38	6.6	4.6	25
26	13	3370	55	50	25	16	12	118	31	6.5	4.7	18
27	10	3190	54	46	25	16	12	164	27	6.6	4.5	14
28	8.3	4930	54	44	24	17	12	70	23	6.5	3.7	12
29	6.2	1850	53	43	---	19	13	54	20	6.4	3.7	11
30	6.4	913	52	41	---	19	13	85	18	6.1	3.4	8.7
31	7.1	---	51	40	---	19	---	685	---	5.7	3.3	---
TOTAL	535.9	31210.9	7203	2857	2290	919	452	8938	4484	292.0	144.6	472.2
MEAN	17.3	1040	232	92.2	81.8	29.6	15.1	288	149	9.42	4.66	15.7
MAX	94	11800	760	835	809	101	21	1770	616	17	7.7	87
MIN	4.8	7.0	51	40	24	16	11	18	18	5.7	2.9	4.1
CFSM	.06	3.37	.75	.30	.26	.10	.05	.93	.48	.03	.02	.05
IN.	.06	3.76	.87	.34	.28	.11	.05	1.08	.54	.04	.02	.06
AC-FT	1060	61910	14290	5670	4540	1820	897	17730	8890	579	287	937

CAL YR 1985 TOTAL 69440.5 MEAN 190 MAX 11800 MIN 1.6 CFSM .61 IN. 8.36 AC-FT 137700
WTR YR 1986 TOTAL 59798.6 MEAN 164 MAX 11800 MIN 2.9 CFSM .53 IN. 7.20 AC-FT 118600

08173000 PLUM CREEK NEAR LULING, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1944, April 1961 to September 1986. Sediment analyses: November 1965 to June 1966.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to September 1986.
WATER TEMPERATURES: October 1967 to September 1986.

INSTRUMENTATION.--Specific conductance and water temperature were recorded continuously from February 1980 to September 1986.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,210 microsiemens Feb. 27, 1977; minimum daily, 100 microsiemens Feb. 10, 1983.
WATER TEMPERATURES: Maximum daily, 35.0°C July 24, 1969; minimum daily, 2.5°C Jan. 14, 1982.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,340 microsiemens Apr. 18; minimum daily, 210 microsiemens Dec. 5, 6, 8.
WATER TEMPERATURES: Maximum daily, 29.0°C Aug. 2; minimum daily, 6.0°C Dec. 15.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 16...	1500	18	1010	8.00	22.0	320	60	110	10
NOV 19...	1327	13	1150	8.00	20.5	340	47	120	11
JAN 14...	1645	42	971	8.20	9.5	290	85	100	10
FEB 25...	1035	26	1490	8.10	14.0	440	180	150	17
APR 22...	1421	12	1500	8.12	21.5	440	130	150	15
JUN 24...	1353	43	734	7.90	26.0	220	44	78	6.9

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 16...	89	2	5.9	256	75	140	0.4	21	600
NOV 19...	110	3	4.2	298	95	140	0.5	21	680
JAN 14...	80	2	3.9	206	95	140	0.4	10	560
FEB 25...	140	3	4.2	264	160	240	0.5	12	880
APR 22...	150	3	4.0	311	140	240	0.5	17	900
JUN 24...	60	2	5.1	179	63	92	0.4	17	430

08173000 PLUM CREEK NEAR LULING, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	535.9	789	462	668	110	159	71	103	230
NOV. 1985	31210.9	367	215	18100	44	3730	36	3060	120
DEC. 1985	7203	308	181	3510	36	706	31	603	98
JAN. 1986	2857	632	370	2850	85	654	59	452	190
FEB. 1986	2290	617	361	2230	85	527	56	346	180
MAR. 1986	919	1270	744	1850	200	505	100	254	350
APR. 1986	452	1520	890	1090	260	315	120	141	410
MAY 1986	8938	545	319	7700	69	1670	52	1260	170
JUNE 1986	4484	490	287	3470	61	738	48	577	150
JULY 1986	292.0	1380	805	634	220	175	110	86	380
AUG. 1986	144.6	1390	811	317	220	88	110	43	380
SEPT 1986	472.2	715	419	534	97	124	66	84	210
TOTAL	59798.6	**	**	43000	**	9400	**	7020	**
WTD.AVG.	164	455	266	**	58	**	43	**	140

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	640	400	535	1180	1130	1150	320	300	310	920	890	902
2	780	650	702	1150	1100	1120	310	290	299	920	900	907
3	840	690	788	1120	1000	1020	310	290	301	900	890	898
4	710	670	683	1050	1010	1030	310	220	277	920	900	909
5	780	710	745	1120	1060	1080	230	210	223	1060	890	911
6	940	780	842	---	---	1100	240	210	225	1180	920	1050
7	1180	960	1100	---	---	1110	230	220	223	930	910	919
8	1200	1160	1170	---	---	1140	230	210	220	930	910	921
9	1230	1200	1220	---	---	1180	240	220	232	960	900	920
10	1200	1150	1170	---	---	1210	250	230	243	970	930	950
11	1180	1150	1160	---	---	1230	270	220	249	960	930	942
12	1200	1170	1190	---	---	1270	260	230	245	940	920	931
13	1230	1190	1210	1300	1280	1290	270	240	259	940	930	932
14	1250	1180	1230	1290	1260	1270	280	260	271	960	930	946
15	1170	1060	1140	1260	1180	1220	310	280	289	960	950	956
16	1040	940	986	1180	1150	1170	340	290	315	1170	960	981
17	1370	970	1060	1150	1070	1100	---	---	348	1660	270	512
18	1680	1390	1560	1100	1070	1080	---	---	383	320	270	286
19	1660	1070	1300	1100	1080	1090	---	---	432	350	300	327
20	1480	890	1230	1100	1090	1100	---	---	465	390	350	366
21	870	420	663	1100	990	1040	---	---	496	440	390	416
22	620	350	512	1090	1030	1070	---	---	549	---	---	512
23	990	530	716	1090	1060	1080	---	---	588	---	---	606
24	680	600	623	1060	250	692	---	---	617	---	---	713
25	660	590	622	290	250	277	---	---	646	---	---	822
26	790	660	718	350	290	323	---	---	685	---	---	930
27	880	780	821	360	310	343	---	---	725	---	---	1020
28	950	880	908	310	290	299	---	---	783	---	---	1110
29	1050	950	1000	310	290	303	---	---	825	1100	1060	1080
30	1120	1040	1080	320	310	311	---	---	861	1120	1100	1110
31	1150	1110	1130	---	---	---	---	---	900	1150	1110	1130
MONTH	1680	350	962	1300	250	957	340	210	435	1660	270	836

08173000 PLUM CREEK NEAR LULING, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1170	1150	1160	1570	1560	1560	1590	1570	822	1510	1430	1480
2	1190	1170	1180	1600	1560	1580	1590	1560	930	1560	1140	1280
3	1220	1120	1190	1610	1590	1600	1580	1560	1020	1170	1090	1140
4	1320	250	398	1600	830	1420	2230	1570	1110	1160	1130	1150
5	360	310	334	870	590	747	1810	1580	1650	1130	1070	1090
6	400	360	374	890	720	825	1600	1580	1590	1080	1070	1070
7	440	400	417	1000	890	940	1610	1580	1600	1080	1070	1080
8	470	430	455	1080	1010	1040	1620	1600	1610	1240	1080	1130
9	500	460	477	1160	1090	1120	1670	1560	1610	1230	880	1110
10	530	500	511	1210	1160	1190	1690	1580	1640	870	510	681
11	---	---	578	1260	1210	1240	1740	1520	1580	520	490	502
12	---	---	623	1310	1250	1290	1770	1560	1640	550	490	519
13	---	---	710	1770	1280	1510	1570	1540	1550	470	450	461
14	---	---	777	1740	1350	1530	1570	1540	1560	470	460	468
15	---	---	822	1350	1330	1340	1540	1490	1520	490	460	478
16	---	---	911	1370	1350	1360	1560	1520	1540	500	490	495
17	---	---	977	1390	1370	1380	1580	1550	1570	560	500	523
18	---	---	1040	1450	1390	1420	2340	1580	1830	550	390	458
19	---	---	1100	1460	1410	1440	2320	1670	1970	480	410	441
20	---	---	1170	1440	1410	1420	1660	1580	1610	520	470	500
21	---	---	1250	1460	1420	1440	1600	1570	1580	570	530	548
22	---	---	1340	1510	1470	1500	1590	1570	1580	630	570	599
23	---	---	1380	2020	1510	1850	1590	1580	1580	690	640	660
24	---	---	1460	1760	1560	1650	1600	1580	1590	750	700	720
25	---	---	1510	1560	1530	1540	1770	1590	1610	800	750	771
26	1550	1520	1530	1570	1520	1540	2070	1830	1960	---	---	725
27	2150	1530	1720	1580	1550	1560	1820	1650	1720	---	---	593
28	2150	1560	1780	1660	1560	1620	1640	1580	1610	---	---	620
29	---	---	---	1660	1640	1650	1580	1510	1560	---	---	760
30	---	---	---	1640	1590	1610	1510	1490	1510	---	---	730
31	---	---	---	1590	1570	1570	---	---	---	---	---	429
MONTH	2150	250	971	2020	590	1400	2340	1490	1540	1560	390	749

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	382	1170	1120	1150	1510	1330	1480	1310	1260	1290
2	---	---	367	1220	1170	1190	1520	1430	1490	1280	1220	1260
3	---	---	375	1240	1220	1230	1510	1440	1490	1210	1160	1170
4	---	---	443	1270	1240	1260	1500	1370	1470	1190	1170	1180
5	---	---	476	1300	1270	1290	1500	1400	1460	1200	1180	1180
6	---	---	485	1310	1290	1300	1500	1400	1470	1220	1200	1210
7	---	---	520	1330	1270	1310	1480	1380	1440	1220	1040	1160
8	---	---	490	1370	1320	1340	1480	1390	1450	1020	940	963
9	---	---	485	1430	1310	1370	1480	1400	1450	1100	990	1050
10	---	---	533	1510	1300	1360	1460	1390	1450	1130	1090	1120
11	---	---	550	1700	1410	1530	1450	1300	1390	1120	1100	1110
12	---	---	612	1450	1320	1420	1410	1390	1400	1140	1110	1130
13	---	---	607	1440	1350	1420	1410	1400	1400	1150	320	684
14	---	---	573	1440	1380	1420	1410	1320	1370	450	380	420
15	---	---	650	1450	1330	1420	1350	1310	1330	490	440	467
16	---	---	698	1450	1320	1420	1350	1290	1310	540	490	516
17	---	---	725	1440	1310	1410	1350	1300	1330	620	540	570
18	---	---	563	1940	1320	1500	1360	1280	1340	700	610	659
19	---	---	395	1940	1480	1650	1370	1340	1360	760	700	732
20	---	---	433	1490	1310	1440	1360	1350	1350	830	770	801
21	---	---	512	1460	1390	1440	1370	1350	1360	900	830	867
22	---	---	601	1450	1330	1420	1340	1260	1290	930	900	915
23	---	---	675	1450	1350	1430	1340	1280	1310	980	720	930
24	740	720	735	1460	1410	1440	1350	1330	1340	650	430	538
25	810	740	774	1470	1390	1450	1350	1340	1350	520	410	452
26	860	800	826	1480	1400	1450	1340	1290	1310	550	520	538
27	920	860	894	1550	1450	1490	1300	1270	1280	590	550	568
28	990	930	960	1560	1450	1540	1300	1290	1300	650	590	623
29	1040	990	1010	1530	1440	1480	1310	1290	1300	720	650	678
30	1120	1010	1110	1480	1420	1470	1310	1300	1310	770	720	746
31	---	---	---	1490	1420	1470	1310	1300	1300	---	---	---
MONTH	1120	720	615	1940	1120	1400	1520	1260	1380	1310	320	851

08173000 PLUM CREEK NEAR LULING, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.0	17.0	17.5	16.0	15.5	15.5	17.5	16.0	17.0	11.5	10.5	10.5
2	17.5	16.5	17.5	15.5	14.5	15.0	16.0	13.0	14.5	11.5	10.5	11.0
3	18.5	17.5	18.0	14.0	13.5	14.0	12.5	12.0	12.5	11.5	11.0	11.5
4	19.5	18.0	19.0	14.0	13.0	13.5	12.5	12.0	12.0	13.0	11.5	12.0
5	19.0	18.0	18.5	14.0	13.0	14.0	12.5	12.0	12.5	12.0	10.0	11.0
6	18.0	16.5	17.5	---	---	---	12.0	11.5	11.5	10.0	9.5	9.5
7	18.5	17.0	18.0	---	---	---	12.0	11.5	12.0	10.5	9.5	10.0
8	20.5	18.5	19.5	---	---	---	13.0	12.0	12.5	9.5	7.5	8.5
9	22.0	20.5	21.0	---	---	---	14.5	12.5	14.0	7.5	7.0	7.0
10	23.0	22.0	22.5	---	---	---	16.5	14.5	15.5	7.5	6.5	7.0
11	24.5	23.0	23.5	---	---	---	16.0	13.0	14.5	8.0	7.0	7.5
12	24.5	23.5	24.0	---	---	---	12.5	9.5	11.0	8.5	7.5	8.0
13	25.0	24.0	24.5	---	---	21.0	9.5	8.0	8.5	9.5	8.5	9.0
14	25.0	24.0	24.5	21.5	21.0	21.5	8.0	7.0	7.0	9.5	8.5	9.0
15	24.5	22.0	23.0	21.5	19.0	20.5	7.0	6.0	6.5	10.5	9.0	9.5
16	22.0	21.5	22.0	19.0	16.5	17.5	8.5	6.5	7.5	12.0	10.5	11.5
17	22.5	21.5	22.0	17.5	16.0	16.5	9.0	8.0	8.5	14.0	12.0	13.0
18	24.0	22.5	23.5	19.5	17.5	18.5	9.5	9.0	9.5	14.5	13.5	14.0
19	24.0	22.5	23.5	20.5	19.5	20.0	9.5	8.5	9.0	14.5	14.0	14.5
20	22.5	21.5	22.0	19.5	14.5	16.5	9.0	8.5	9.0	14.5	13.5	14.0
21	21.5	21.0	21.5	14.5	13.5	14.0	9.5	8.5	9.0	16.0	14.0	15.0
22	22.0	21.0	21.5	15.5	14.5	15.0	11.0	9.5	10.0	16.0	14.0	15.0
23	22.5	21.5	22.0	17.0	15.5	16.5	11.5	11.0	11.5	14.0	13.0	13.5
24	23.0	22.0	22.5	19.5	17.5	18.5	11.5	11.0	11.0	14.0	13.0	13.5
25	23.0	22.5	22.5	20.5	19.5	20.0	11.0	9.0	9.5	14.5	14.0	14.0
26	22.5	21.5	22.0	20.5	20.5	20.5	9.0	8.0	8.5	13.5	12.0	12.5
27	21.5	20.5	21.0	20.5	19.0	20.0	10.5	9.0	10.0	12.0	10.5	11.0
28	20.5	18.5	19.5	19.0	17.0	17.5	11.0	10.0	10.5	11.5	9.5	10.5
29	18.5	17.5	18.0	16.5	16.5	16.5	11.0	10.0	10.5	13.0	11.5	12.0
30	17.5	16.5	17.0	17.0	16.5	16.5	11.5	11.0	11.0	14.0	12.5	13.0
31	17.0	16.0	16.5	---	---	---	12.0	11.5	11.5	16.0	14.0	15.0
MONTH	25.0	16.0	21.0	21.5	13.0	17.5	17.5	6.0	11.0	16.0	6.5	11.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	17.0	15.5	16.5	14.5	12.5	13.5	21.0	20.0	20.5	23.5	22.5	23.0
2	18.0	17.0	17.5	16.5	13.0	14.5	21.5	20.5	21.0	22.5	21.5	22.0
3	18.5	18.0	18.0	17.5	15.5	16.5	21.0	20.5	20.5	21.5	20.5	21.0
4	18.0	17.5	17.5	17.0	15.5	16.5	22.0	20.5	21.0	21.0	20.0	20.5
5	17.5	16.5	17.0	16.0	13.5	15.0	23.0	21.5	22.0	22.0	20.5	21.0
6	16.5	15.0	15.5	16.5	15.0	16.0	22.5	22.5	22.5	23.0	21.5	22.0
7	15.0	14.0	14.5	16.5	14.5	16.0	23.5	22.0	22.5	23.0	22.5	23.0
8	14.5	12.0	13.5	18.0	16.0	17.0	24.0	22.5	23.5	23.5	22.5	23.0
9	11.5	10.0	11.0	19.0	17.5	18.5	24.0	20.0	22.0	23.5	23.0	23.0
10	10.0	8.5	9.0	21.0	19.0	20.0	19.5	17.5	18.5	23.0	21.0	22.0
11	8.0	7.5	8.0	20.5	20.0	20.5	19.0	17.5	18.0	24.5	21.0	22.0
12	8.0	7.0	7.5	20.0	19.0	19.5	21.5	19.0	20.5	24.0	22.5	23.0
13	8.5	8.0	8.5	19.0	17.0	17.5	23.0	21.0	22.0	23.5	22.5	23.0
14	12.0	8.5	10.5	17.0	15.5	16.5	23.5	22.0	23.0	23.5	23.0	23.5
15	12.5	11.0	12.0	18.0	15.5	16.5	22.0	20.5	21.0	23.5	23.0	23.0
16	15.5	12.5	14.5	18.0	15.5	17.0	20.5	19.0	19.5	23.0	23.0	23.0
17	17.5	15.5	16.5	18.5	16.5	17.5	20.0	19.5	20.0	23.5	22.0	23.0
18	17.5	15.5	16.5	19.5	18.0	19.0	20.5	20.0	20.5	22.0	20.0	20.5
19	18.5	16.5	17.5	18.5	16.5	17.0	22.0	20.5	21.0	20.5	20.0	20.0
20	19.0	17.0	18.0	16.0	14.5	15.5	22.0	20.0	21.0	21.5	20.0	20.5
21	18.5	15.0	16.5	15.5	14.0	15.0	21.5	19.5	20.5	22.0	21.0	21.5
22	15.0	13.5	14.0	16.0	14.0	15.0	21.5	19.5	20.5	23.0	21.5	22.0
23	14.0	12.0	13.5	16.5	14.5	15.5	21.5	19.5	20.5	24.0	22.5	23.0
24	15.0	12.5	14.0	17.0	15.5	16.5	22.5	20.5	21.5	24.5	23.5	24.0
25	16.0	13.5	14.5	18.0	16.0	17.0	22.5	21.0	21.5	25.0	24.5	24.5
26	17.5	14.5	16.0	18.5	17.0	18.0	23.5	22.0	22.5	---	---	---
27	17.5	15.5	16.5	19.5	18.0	19.0	23.0	22.5	23.0	---	---	---
28	16.5	14.5	15.5	20.0	18.5	19.5	24.0	22.0	23.0	---	---	---
29	---	---	---	19.5	18.0	19.0	23.5	23.0	23.5	---	---	---
30	---	---	---	20.0	18.5	19.5	23.5	22.5	23.0	---	---	---
31	---	---	---	20.5	19.0	20.0	---	---	---	---	---	---
MONTH	19.0	7.0	14.5	21.0	12.5	17.0	24.0	17.5	21.5	25.0	20.0	22.5

08173000 PLUM CREEK NEAR LULING, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	27.0	26.5	27.0	28.5	27.0	28.0	24.5	24.5	24.5
2	---	---	---	27.5	26.5	27.0	29.0	27.5	28.0	25.5	24.5	25.0
3	---	---	---	27.5	27.0	27.5	28.5	27.0	28.0	26.0	25.0	25.5
4	---	---	---	27.5	27.0	27.5	28.0	27.0	27.5	26.5	25.0	25.5
5	---	---	---	27.5	27.0	27.0	27.5	26.5	27.0	26.5	25.5	26.0
6	---	---	---	27.5	26.5	27.0	27.0	26.0	26.5	26.0	25.0	25.5
7	---	---	---	27.0	26.0	26.5	27.5	26.5	27.0	25.0	24.0	24.5
8	---	---	---	27.0	26.0	26.5	28.0	26.5	27.0	24.5	24.0	24.0
9	---	---	---	27.0	26.0	26.5	27.5	26.5	27.0	25.0	24.0	24.5
10	---	---	---	27.0	26.0	26.5	27.5	26.5	27.0	26.0	24.5	25.0
11	---	---	---	27.0	26.0	26.5	27.0	27.0	27.0	26.5	25.0	25.5
12	---	---	---	27.5	26.5	27.0	27.0	26.0	26.5	26.0	25.5	25.5
13	---	---	---	27.0	26.5	26.5	27.0	25.5	26.0	25.5	24.0	24.5
14	---	---	---	27.5	26.0	26.5	27.0	25.5	26.5	25.0	24.0	24.5
15	---	---	---	27.0	26.0	26.5	27.0	26.0	26.5	25.5	24.5	25.0
16	---	---	---	26.5	25.5	26.0	27.0	25.5	26.5	25.5	24.5	25.0
17	---	---	---	27.0	25.5	26.0	27.5	26.0	26.5	25.5	25.0	25.5
18	---	---	---	26.5	25.5	26.0	28.0	26.5	27.0	26.0	25.0	25.5
19	---	---	---	27.0	25.5	26.5	28.0	26.5	27.0	26.0	25.0	25.5
20	---	---	---	27.0	25.5	26.5	27.5	26.5	27.0	25.5	25.0	25.0
21	---	---	---	27.5	26.0	26.5	27.0	26.0	26.5	26.0	25.0	25.0
22	---	---	---	27.5	26.0	27.0	26.0	25.0	25.5	26.0	25.0	25.5
23	---	---	---	28.0	26.5	27.0	25.0	24.5	24.5	25.5	25.0	25.0
24	27.0	26.5	26.5	28.0	26.5	27.0	25.5	24.5	25.0	25.5	25.0	25.5
25	27.0	26.0	26.5	28.0	26.5	27.5	26.0	25.0	25.5	26.0	25.0	25.5
26	27.0	26.0	26.5	28.0	27.0	27.5	26.5	25.5	26.0	26.0	25.0	25.5
27	27.0	26.0	26.5	28.5	27.0	27.5	27.0	25.5	26.0	26.0	25.5	25.5
28	27.5	26.5	27.0	28.5	27.0	27.5	26.0	25.5	25.5	26.0	25.5	25.5
29	27.5	26.5	27.0	28.5	27.0	27.5	25.5	24.5	25.0	26.0	25.5	25.5
30	27.5	26.5	27.0	28.5	27.0	28.0	24.5	23.0	24.0	26.0	25.5	25.5
31	---	---	---	28.5	27.0	27.5	25.0	24.0	24.5	---	---	---
MONTH	27.5	26.0	26.5	28.5	25.5	27.0	29.0	23.0	26.5	26.5	24.0	25.0

08175000 SANDIES CREEK NEAR WESTHOFF, TX

LOCATION.--Lat 29°12'54", long 97°26'57", De Witt County, Hydrologic Unit 12100202, on left bank 100 ft downstream from bridge on county highway, 1.9 mi upstream from Birds Creek, 2.0 mi northeast of Westhoff, and 20.4 mi upstream from mouth.

DRAINAGE AREA.--549 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to November 1934, August 1959 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 170.27 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 9, 1934, water-stage recorder at site 150 ft upstream at datum 0.86 ft higher. Aug. 10, 1959, to Feb. 2, 1960, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Nov. 21 to Jan. 16 and Jan. 18-23. Records good except those for estimated daily discharges, which are poor. No known diversion above station.

AVERAGE DISCHARGE.--31 years (water years 1931-34, 1960-86), 122 ft³/s (3.02 in/yr), 88,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,700 ft³/s Sept. 22, 1967 (gage height, 32.34 ft), from rating curve extended above 21,000 ft³/s on basis of slope-area measurement of 92,700 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1864, 92,700 ft³/s July 2, 1936 (gage height, 33.1 ft, from floodmarks), on basis of computation of peak flow, at present site and datum.

Flood in October 1913 reached a stage of 26.0 ft, present site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 24	Unknown	*2,000	Unknown	No other peak greater than base discharge.			

Minimum daily discharge, 2.2 ft³/s Sept. 2-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	12	70	100	8.7	8.7	8.9	6.5	258	5.5	2.7	2.4
2	26	152	60	90	8.7	8.3	8.9	6.8	390	4.9	2.6	2.2
3	13	286	48	30	51	8.4	8.9	6.7	281	4.7	2.6	2.2
4	8.2	354	42	15	395	12	8.9	6.7	125	4.5	2.6	2.2
5	5.7	307	40	10	246	21	8.9	7.0	187	4.2	2.4	2.3
6	4.6	71	37	9.0	71	18	8.9	7.1	121	4.2	2.3	2.3
7	3.9	26	35	9.0	41	14	8.9	7.0	55	3.9	2.3	3.0
8	3.7	16	33	25	25	13	9.0	6.9	122	3.8	2.3	3.2
9	3.3	12	31	14	18	13	9.1	6.7	446	3.8	2.3	4.8
10	2.9	11	35	12	14	12	9.1	6.7	300	4.9	2.3	5.6
11	3.1	9.7	700	11	12	11	9.1	6.7	80	5.4	2.7	6.8
12	3.2	9.3	500	10	11	12	9.1	6.7	90	4.6	3.8	5.4
13	3.3	11	200	10	11	11	9.1	6.5	138	4.0	5.5	4.5
14	3.7	12	150	9.8	11	11	8.9	6.2	184	3.4	4.4	3.7
15	27	10	100	9.6	10	11	8.7	6.9	121	3.1	3.7	3.4
16	49	14	75	24	10	11	8.3	6.8	67	15	3.7	3.1
17	67	24	55	16	10	11	8.2	6.9	34	31	3.5	2.8
18	36	19	40	15	10	10	8.1	9.3	384	14	3.1	2.7
19	43	13	28	14	10	10	8.0	7.9	329	11	2.9	2.7
20	196	9.5	21	13	10	9.9	7.6	8.4	164	7.2	2.8	2.7
21	283	8.0	18	12	9.6	9.4	7.6	8.6	65	5.7	2.8	2.7
22	648	7.6	15	11	9.3	9.3	7.4	7.8	32	4.9	2.8	2.8
23	928	150	13	11	9.2	9.2	7.4	7.3	39	4.5	2.8	2.5
24	818	1800	12	11	9.0	9.1	7.2	6.9	74	4.0	2.8	2.5
25	411	1000	12	10	8.8	9.1	6.8	6.4	38	3.7	2.8	3.1
26	83	500	11	9.7	8.8	9.0	6.7	23	19	3.4	2.7	3.1
27	31	300	11	9.4	8.6	8.9	6.7	80	14	3.3	2.6	3.1
28	17	200	10	9.1	8.6	8.9	6.7	415	10	3.3	2.6	3.1
29	12	140	10	9.1	---	8.9	6.2	281	7.4	3.2	2.6	3.4
30	8.9	90	10	8.8	---	8.9	6.4	97	6.1	2.9	2.4	3.6
31	7.5	---	10	8.7	---	8.9	---	93	---	2.8	2.4	---
TOTAL	3820.0	5574.1	2432	556.2	1055.3	335.9	243.7	1166.4	4180.5	184.8	89.8	97.9
MEAN	123	186	78.5	17.9	37.7	10.8	8.12	37.6	139	5.96	2.90	3.26
MAX	928	1800	700	100	395	21	9.1	415	446	31	5.5	6.8
MIN	2.9	7.6	10	8.7	8.6	8.3	6.2	6.2	6.1	2.8	2.3	2.2
CFSM	.22	.34	.14	.03	.07	.02	.01	.07	.25	.01	.01	.01
IN.	.26	.38	.16	.04	.07	.02	.02	.08	.28	.01	.01	.01
AC-FT	7580	11060	4820	1100	2090	666	483	2310	8290	367	178	194

CAL YR 1985 TOTAL 22283.2 MEAN 61.0 MAX 1800 MIN 1.0 CFSM .11 IN. 1.51 AC-FT 44200
WTR YR 1986 TOTAL 19736.6 MEAN 54.1 MAX 1800 MIN 2.2 CFSM .10 IN. 1.34 AC-FT 39150

08175000 SANDIES CREEK NEAR WESTHOFF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1962 to current year. Sediment analyses: November 1965 to May 1966.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 11...	1650	3.3	1120	7.60	25.0	75	0	23	4.3
NOV 20...	1130	9.9	848	--	17.0	56	0	17	3.4
JAN 17...	1500	15	1290	7.80	--	140	0	45	7.9
FEB 28...	1230	8.6	1300	8.10	17.0	180	0	54	12
MAY 09...	1100	6.5	1590	8.10	25.5	110	0	33	7.1
JUL 15...	1555	3.0	1130	7.80	28.0	110	0	33	6.4
SEP 05...	1430	2.2	1710	8.30	28.0	91	0	28	5.2

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 11...	220	11	10	320	39	140	0.6	19	650
NOV 20...	160	10	7.7	167	31	160	0.4	17	500
JAN 17...	210	8	10	246	80	220	0.5	16	740
FEB 28...	220	7	12	262	100	220	0.5	9.9	790
MAY 09...	300	13	10	371	46	260	0.9	17	900
JUL 15...	210	9	15	300	30	180	0.5	20	670
SEP 05...	350	17	12	523	30	240	1.1	14	990

08175800 GUADALUPE RIVER AT CUERO, TX

LOCATION.--Lat 29°03'57", long 97°19'16", De Witt County, Hydrologic Unit 12100204, on left bank at downstream side of bridge on U.S. Highways 77A, 87, and 183, 2.1 mi upstream from Gohlke Creek, 2.4 mi southwest of Cuero, 4.2 mi downstream from Sandies Creek, and at mile 100.6.

DRAINAGE AREA.--4,934 mi², of which 1,432 mi² is above Canyon Dam.

PERIOD OF RECORD.--December 1902 to December 1906, August 1916 to December 1935, January 1964 to current year. Published as "near Cuero" 1902-6, and as "below Cuero" 1916-35. Gage-height records collected at site 7.1 mi upstream from Sandies Creek from 1941 to 1966 (published in reports of the National Weather Service) and at present site since June 12, 1968.

Water-quality records.--Chemical analyses: March 1986 to September 1985.

REVISED RECORDS.--WDR TX-68-1, TX-69-1: Drainage areas at all sites.

GAGE.--Water-stage recorder. Datum of gage is 128.64 ft above National Geodetic Vertical Datum of 1929. Dec. 26, 1902, to June 1903, nonrecording gage at site 7.1 mi upstream at different datum, gage heights moved to site 3.3 mi upstream from present site before computation; July 1903 to December 1906 nonrecording gage 3.3 mi upstream at different datum; Aug. 19, 1916, to Dec. 16, 1935, water-stage recorder at site 5.0 mi downstream at datum 3.19 ft lower.

REMARKS.--Estimated daily discharges: Oct. 31, June 2, 3, and Sept. 30. Records good. Since July 21, 1962, flow regulated by Canyon Lake (station 08167700) 202.4 mi upstream. Flow below New Braunfels is partly regulated by a series of small power dams, combined capacity of six largest dams 33,550 acre-ft. Flow is affected at times by discharge from the flood-detention pools of 53 floodwater-retarding structures with combined detention capacity of 87,200 acre-ft. These structures control runoff from 302 mi² in the Comal, San Marcos, and Plum Creek drainage basins. Many small diversions above station. Satellite telemeter at station.

AVERAGE DISCHARGE.--20 years (water years 1904-6, 1917-18, 1921-35) prior to regulation by Canyon Lake, 1,303 ft³/s (944,000 acre-ft/yr); 22 years (water years 1965-86) regulated, 1,953 ft³/s (1,415,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 132,000 ft³/s Sept. 1, 1981 (gage height, 41.83 ft); minimum daily, 28 ft³/s July 22, 1984.

Floods at this station since at least 1900 occurred Mar. 1, 1903, 43.0 ft, at different site and datum; Oct. 20, 1919, 32.2 ft, site and datum then in use; May 30, 1929, 35.2 ft, site and datum then in use; all from information by local residents.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, probably occurred July 2, 1936, 44.33 ft, present site and datum, from information by State Department of Highways and Public Transportation. Other floods at this station occurred Oct. 4, 1913, 37.57 ft, at different site and datum; Dec. 6, 1913, 34.57 ft, at different site and datum; June 21, 1961, 37.0 ft, present site and datum; all from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,100 ft³/s Nov. 27 at 2400 hours (gage height, 22.57 ft); minimum daily, 579 ft³/s Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1530	1640	11600	1980	1230	1190	985	681	3060	1660	783	664
2	1160	1750	5110	1870	1230	1120	979	719	5900	1680	776	672
3	904	1810	3770	1800	1220	1120	995	816	5300	1640	720	723
4	805	1920	3290	1730	2130	1180	921	829	3160	1670	722	764
5	810	1960	2930	1720	2400	1330	902	839	3690	1550	742	725
6	727	1800	2760	1780	3100	1460	910	752	6120	1420	848	720
7	737	1650	2540	1760	2380	1280	895	746	5300	1410	752	712
8	868	1580	2260	1730	1790	1280	875	775	4630	1410	638	795
9	818	1540	2290	1590	1630	1240	926	742	3720	1450	775	2930
10	752	1540	2230	1630	1680	1200	971	756	3670	1360	667	2180
11	634	1640	2210	1740	1650	1160	921	987	2890	1350	712	1140
12	670	1620	2950	1630	1620	1170	904	3030	2430	1280	647	1190
13	689	1570	3080	1530	1570	1180	936	4500	3250	1220	743	1430
14	602	1600	2700	1570	1610	1200	889	2450	2640	1020	783	1630
15	658	1610	2500	1460	1580	1130	885	1730	2960	1070	641	1670
16	772	1590	2300	1310	1540	1130	889	1540	2390	948	650	1210
17	1180	1590	2200	1490	1540	1120	862	1490	2170	1020	662	1280
18	958	1590	2150	1800	1540	1120	807	1470	2330	1090	653	1420
19	852	1580	2100	2980	1550	1100	800	1600	2350	1010	629	1330
20	906	1550	2040	2290	1540	1090	894	2780	2610	976	656	1360
21	1730	1540	2000	1830	1490	1080	910	2330	2850	928	585	1400
22	1910	1500	1970	1510	1480	1030	866	1640	2360	977	579	1410
23	3220	1300	1950	1440	1470	976	856	1510	2180	980	644	1440
24	3100	2020	1940	1460	1480	935	801	1320	2050	932	685	1420
25	2520	8700	1910	1360	1620	912	719	1220	1990	931	635	1500
26	3270	12500	1910	1310	1460	1030	718	1190	1920	895	744	1490
27	4300	14800	1900	1240	1390	967	731	1260	1900	938	664	1460
28	4240	15000	1880	1250	1120	942	722	1530	1840	840	734	1180
29	2500	14300	1820	1240	---	1000	751	1800	1690	813	620	884
30	1770	13700	1820	1200	---	888	781	1560	1710	837	615	800
31	1630	---	1840	1220	---	982	---	1550	---	806	621	---
TOTAL	47222	118490	83950	50450	46040	34542	26001	46142	91060	36111	21325	37529
MEAN	1523	3950	2708	1627	1644	1114	867	1488	3035	1165	688	1251
MAX	4300	15000	11600	2980	3100	1460	995	4500	6120	1680	848	2930
MIN	602	1300	1820	1200	1120	888	718	681	1690	806	579	664
AC-FT	93660	235000	166500	100100	91320	68510	51570	91520	180600	71630	42300	74440

CAL YR 1985 TOTAL 717154 MEAN 1965 MAX 15000 MIN 549 AC-FT 1422000
WTR YR 1986 TOTAL 638862 MEAN 1750 MAX 15000 MIN 579 AC-FT 1267000

08176500 GUADALUPE RIVER AT VICTORIA, TX
(National stream-quality accounting network)

LOCATION.--Lat 28°47'34", long 97°00'46", Victoria County, Hydrologic Unit 12100204, on left bank just upstream from pier of upstream bridge of two bridges on U.S. Highway 59 in Victoria, 1,300 ft upstream from Southern Pacific Railroad Co. bridge, 15 mi upstream from Coleto Creek, and at mile 50.7.

DRAINAGE AREA.--5,198 mi^2, of which 1,432 mi^2 is above Canyon Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1934 to current year. Gage-height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 29.15 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Since July 21, 1962, flow is regulated by Canyon Lake (station 08167700) 252.3 mi upstream. Many diversions above station. Records provided by the city of Victoria show a discharge of about 7,340 acre-ft of sewage effluent below station. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08175800. Satellite telemeter at station.

AVERAGE DISCHARGE.--27 years (water years 1936-62) prior to regulation by Canyon Lake, 1,626 ft^3/s (1,178,000 acre-ft/yr); 24 years (water years 1963-86) regulated, 1,938 ft^3/s (1,404,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 179,000 ft^3/s July 3, 1936 (gage height, 31.22 ft); minimum daily, 14 ft^3/s Aug. 20, 1956.
Maximum stage since at least 1833, that of July 3, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1929, reached a stage of 30.2 ft, present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,700 ft^3/s Nov. 29 at 1200 hours (gage height, 26.29 ft); minimum daily, 559 ft^3/s Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1420	1730	13000	2030	1400	1290	1080	877	1760	1700	779	589
2	1470	1850	10100	2140	1400	1320	1080	796	3920	1670	759	612
3	1200	1890	5080	1990	1410	1300	1080	839	5640	1640	760	611
4	998	1970	4030	1940	1600	1330	1090	913	4580	1650	689	668
5	960	2050	3510	1850	2440	1340	1020	917	3100	1630	719	711
6	909	2050	3230	1900	2860	1490	1010	909	4460	1500	792	697
7	868	1820	3030	1930	3000	1490	1020	836	6480	1410	847	740
8	802	1710	2750	1950	2300	1390	989	847	5660	1440	698	719
9	1030	1650	2600	1810	1810	1420	977	857	4560	1420	658	1140
10	995	1620	2600	1730	1790	1350	1040	1030	3940	1440	732	3060
11	801	1770	2560	1820	1780	1320	1060	925	3690	1350	655	1690
12	771	2230	2690	1830	1760	1310	1020	1390	3020	1350	689	1050
13	803	1720	3400	1700	1690	1310	1020	3920	3030	1260	660	1250
14	808	1660	3160	1660	1690	1320	1030	3850	3280	1240	720	1400
15	835	1730	2900	1700	1710	1310	1000	2150	3060	1050	747	1620
16	840	1740	2670	1590	1660	1240	995	1680	3100	1080	633	1440
17	1040	1700	2510	1590	1640	1270	1010	1530	2560	962	644	1160
18	1330	1670	2440	1790	1640	1240	980	1550	2460	1070	643	1280
19	1050	1670	2360	2420	1630	1240	928	1460	2670	1080	620	1330
20	1000	1650	2300	2990	1640	1190	921	2000	2650	1030	617	1300
21	1190	1630	2240	2220	1610	1220	1010	2860	2840	986	619	1300
22	1980	1620	2190	1880	1560	1180	975	2030	2800	948	583	1340
23	2340	1530	2160	1570	1570	1140	958	1610	2370	992	627	1380
24	3410	1400	2140	1610	1540	1090	948	1470	2210	991	673	1350
25	3080	3960	2110	1560	1620	1040	901	1350	2140	937	653	1380
26	2630	8800	2090	1500	1710	1070	816	1340	2050	940	620	1420
27	3840	11000	2090	1450	1500	1140	830	1380	1950	883	707	1400
28	4450	12900	2070	1410	1400	1050	832	1420	1900	920	628	1370
29	3880	13600	2030	1450	---	1090	826	1730	1820	808	689	1050
30	2280	13500	2000	1400	---	1070	833	1820	1750	795	564	879
31	1830	---	2000	1420	---	1020	---	1720	---	811	559	---
TOTAL	50840	105820	100040	55830	49360	38580	29279	48006	95450	36983	20983	35936
MEAN	1640	3527	3227	1801	1763	1245	976	1549	3182	1193	677	1198
MAX	4450	13600	13000	2990	3000	1490	1090	3920	6480	1700	847	3060
MIN	771	1400	2000	1400	1400	1020	816	796	1750	795	559	589
AC-FT	100800	209900	198400	110700	97910	76520	58070	95220	189300	73360	41620	71280

CAL YR 1985 TOTAL 773814 MEAN 2120 MAX 13600 MIN 567 AC-FT 1535000
WTR YR 1986 TOTAL 667107 MEAN 1828 MAX 13600 MIN 559 AC-FT 1323000

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1945 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: February 1974 to August 1981. Sediment analyses: April 1959, August 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1945 to September 1981.
WATER TEMPERATURES: November 1950 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,950 microsiemens on several days during January 1946; minimum daily, 135 microsiemens Sept. 3, 1981.
WATER TEMPERATURES: Maximum daily, 32.0°C Aug. 4, 27, 1952; minimum daily, 2.0°C Jan. 11, 12, 1962, Jan. 24, 1963.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT												
10...	1000	922	478	8.20	24.5	50	7.5	90	0.5	--	K52	220
JAN												
16...	1600	1470	580	8.10	13.0	15	10.5	98	0.8	--	--	250
APR												
23...	1300	960	626	8.30	23.5	21	8.8	103	1.6	21	K12	260
SEP												
03...	1830	463	533	8.30	30.0	21	7.7	--	1.2	48	47	160

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT												
10...	14	65	15	21	0.6	2.4	211	23	29	0.2	11	295
JAN												
16...	24	74	16	24	0.7	2.1	227	20	37	0.3	10	344
APR												
23...	22	75	17	29	0.8	2.2	235	28	41	0.2	11	340
SEP												
03...	0	47	10	22	0.8	2.1	197	27	30	0.3	11	270

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
OCT												
10...	300	0.84	0.01	0.85	0.08	0.05	0.42	0.5	0.12	0.08	0.07	0.21
JAN												
16...	310	1.09	0.01	1.10	0.04	0.02	0.36	0.4	0.06	0.05	0.04	0.12
APR												
23...	340	--	<0.01	1.10	0.02	0.02	0.38	0.4	0.13	0.08	0.06	0.18
SEP												
03...	270	--	<0.01	0.44	<0.01	0.02	--	0.3	0.05	0.03	0.03	0.09

DATE	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT												
10...	64	159	96	<10	2	69	<0.5	<1	<1	<3	<1	<3
JAN												
16...	46	183	81	<10	1	64	<0.5	<1	<1	<3	<1	4
APR												
23...	110	285	65	--	--	--	--	--	--	--	--	--
SEP												
03...	41	51	93	<10	2	78	<0.5	<1	<1	<3	<1	3

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 10...	<1	12	<1	<0.1	<10	2	<1	<1	460	<6	5
JAN 16...	2	13	5	<0.1	<10	1	<1	<1	510	<6	10
APR 23...	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	<5	16	4	<0.1	<10	<1	<1	<1	480	<6	21

08176550 FIFTEENMILE CREEK NEAR WESER, TX

LOCATION.--Lat 28°53'51", long 97°21'17", De Witt County, Hydrologic Unit 12100204, at DeWitt-Goliad County line, on left downstream end of bridge on U.S. Highway 183, and 2.4 mi northeast of Weser.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--October 1984 to September 1985.

GAGE.--Water-stage recorder. Datum of gage is 158.37 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known diversions above station. Guadalupe-Blanco River Authority gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,000 ft³/s Mar. 14, 1985 (gage height, 11.00 ft); minimum daily, 0.86 ft³/s Aug. 10, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 12	2300	*1,060	*9.47	No other peak greater than base discharge.			

Minimum daily discharge, 0.86 ft³/s Aug. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	4.7	13	7.1	6.9	7.7	6.0	3.5	13	4.8	1.1	1.7
2	20	7.5	11	7.1	7.0	7.7	6.0	3.7	10	4.5	1.0	1.8
3	12	19	10	7.1	7.5	7.9	6.0	3.8	12	4.2	.96	1.7
4	9.5	9.8	9.7	7.1	295	8.2	6.0	3.8	9.1	3.8	.94	1.7
5	7.9	7.4	9.2	7.0	95	8.0	6.0	3.7	8.0	3.7	1.0	1.8
6	7.1	6.6	8.9	6.9	26	7.8	6.0	3.6	7.1	3.4	1.4	1.8
7	6.5	6.1	8.6	7.0	16	7.6	5.8	3.5	7.0	3.3	1.2	2.5
8	6.0	5.9	8.4	8.4	12	7.6	5.5	3.4	7.4	3.3	1.0	3.0
9	5.8	5.7	8.3	8.8	11	7.6	5.4	3.5	6.9	3.1	.91	3.0
10	5.5	5.5	8.2	8.8	9.7	7.6	5.4	6.8	6.8	3.0	.86	2.9
11	5.3	12	8.7	8.4	9.0	7.5	5.5	6.9	77	2.9	1.1	2.6
12	5.0	12	61	8.1	8.4	7.8	5.6	6.1	123	3.0	1.9	2.2
13	4.8	7.3	33	7.7	8.1	7.2	4.9	4.9	139	2.8	6.3	1.9
14	4.6	6.5	17	7.5	7.9	7.1	4.4	4.5	49	2.8	6.3	1.7
15	6.1	7.3	13	7.4	7.7	7.0	4.2	4.4	25	2.7	3.2	1.7
16	6.8	15	11	7.4	7.4	6.8	4.0	4.4	13	2.6	2.6	1.7
17	6.3	11	9.7	7.5	7.4	6.7	3.9	4.5	9.6	2.4	2.3	1.6
18	5.6	9.3	9.2	7.4	7.5	6.8	3.9	4.5	7.6	2.3	2.1	1.4
19	5.1	7.8	8.8	7.4	7.8	6.8	3.9	4.3	13	2.1	1.9	1.2
20	5.1	6.9	8.4	7.2	8.1	6.6	4.3	4.2	29	2.0	1.7	1.4
21	5.1	6.4	8.2	7.2	8.3	6.3	4.0	4.0	13	1.9	1.7	1.4
22	5.2	6.3	8.0	7.1	8.4	6.1	3.7	3.8	9.6	1.8	1.9	1.6
23	5.3	6.3	7.9	7.0	8.2	6.1	3.5	3.7	9.7	1.7	2.1	1.6
24	7.3	6.5	7.7	6.9	8.1	6.0	3.5	3.7	13	1.5	2.5	1.4
25	6.8	42	7.6	6.9	8.1	6.2	3.3	4.0	7.5	1.4	2.6	1.2
26	5.9	19	7.4	6.9	8.0	6.3	3.2	4.7	9.4	1.4	2.5	1.2
27	5.4	14	7.4	6.8	8.0	6.3	3.2	5.0	10	1.3	2.2	.99
28	5.0	51	7.4	6.8	7.9	6.3	3.3	5.5	7.6	1.3	1.8	1.2
29	4.9	31	7.3	6.8	---	6.0	3.3	4.8	6.2	1.2	1.7	1.3
30	4.8	17	7.2	6.8	---	6.0	3.4	5.1	5.4	1.2	1.6	1.2
31	4.8	---	7.2	6.8	---	6.1	---	11	---	1.1	1.7	---
TOTAL	280.5	372.8	358.4	227.3	630.4	215.7	137.1	143.3	663.9	78.5	62.07	52.39
MEAN	9.05	12.4	11.6	7.33	22.5	6.96	4.57	4.62	22.1	2.53	2.00	1.75
MAX	85	51	61	8.8	295	8.2	6.0	11	139	4.8	6.3	3.0
MIN	4.6	4.7	7.2	6.8	6.9	6.0	3.2	3.4	5.4	1.1	.86	.99
AC-FT	556	739	711	451	1250	428	272	284	1320	156	123	104

CAL YR 1985 TOTAL 6730.8 MEAN 18.4 MAX 628 MIN 1.7 AC-FT 13350
WTR YR 1986 TOTAL 3222.36 MEAN 8.83 MAX 295 MIN .86 AC-FT 6390

08176900 COLETO CREEK AT ARNOLD ROAD CROSSING NEAR SCHROEDER, TX

LOCATION.--Lat 28°51'41", long 97°13'34", Goliad County, Hydrologic Unit 12100204, on right bank at downstream side of Arnold Road Crossing, 0.7 mi downstream from confluence of Twelvemile and Fifteenmile Creeks, 3.2 mi north of Schroeder, 12.8 mi upstream from Coleto Creek Reservoir, and 26.0 mi upstream from mouth.

DRAINAGE AREA.--357 mi^2.

PERIOD OF RECORD.--October 1978 to current year. Records equivalent for January 1930 to December 1933 and October 1952 to September 1979, published as "near Schroeder".

GAGE.--Water-stage recorder. Datum of gage is 100.43 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known diversion above station. Wireless telemeter at station.

AVERAGE DISCHARGE.--8 years, 77.6 ft^3/s (56,220 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,500 ft^3/s Aug. 31, 1981 (gage height, 17.78 ft); minimum daily, 1.0 ft^3/s Aug. 1-5, 1986.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharges since at least 1872 at site 3.5 mi downstream, 122,000 ft^3/s Sept. 21, 1967 (slope-area measurement of peak flow), 63,700 ft^3/s Oct. 16, 1946, and 46,700 ft^3/s in October 1925, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 13	0400	*1,650	*8.74				

Minimum daily discharge, 1.0 ft^3/s Aug. 1-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	11	23	12	9.3	14	9.9	5.6	25	11	1.0	2.4
2	63	12	19	12	9.3	14	9.8	5.9	18	9.7	1.0	2.6
3	34	16	18	12	11	13	9.6	6.1	27	8.8	1.0	2.5
4	25	20	18	12	35	15	9.6	5.8	21	7.9	1.0	2.2
5	19	16	17	11	222	14	9.6	5.8	14	7.2	1.0	2.5
6	17	14	16	11	64	14	9.6	5.8	36	6.6	3.8	3.5
7	15	13	15	11	39	13	9.2	5.6	17	6.2	3.2	5.9
8	14	13	15	16	30	13	8.8	5.6	12	5.9	1.9	4.5
9	12	12	15	18	26	13	8.2	5.4	9.9	5.4	1.7	5.2
10	12	12	14	17	24	13	7.7	23	8.8	5.0	1.7	4.1
11	10	15	16	16	22	13	7.7	22	9.1	4.6	1.6	3.4
12	9.6	72	20	15	21	13	7.8	13	88	4.2	4.0	3.0
13	9.7	37	53	14	20	13	7.8	9.6	770	3.9	6.0	2.8
14	9.5	24	32	13	20	13	7.4	8.0	182	3.8	5.6	2.6
15	16	20	24	13	19	13	6.8	7.4	138	3.7	6.8	2.6
16	16	31	20	13	18	13	6.3	7.0	69	3.4	5.6	2.5
17	14	35	18	13	17	12	6.3	7.2	45	3.0	4.5	2.4
18	13	27	18	13	16	12	6.3	7.0	33	2.5	3.8	2.3
19	12	22	16	13	16	12	6.4	6.0	28	2.1	3.5	2.0
20	12	19	15	12	15	12	6.4	5.6	42	1.8	3.1	2.2
21	12	18	15	12	15	11	6.1	5.5	39	1.8	3.2	2.2
22	13	17	14	11	15	11	5.8	5.0	27	2.0	4.7	2.1
23	13	16	14	11	15	11	5.6	4.6	30	1.9	4.5	2.0
24	11	15	13	11	15	11	5.6	4.5	42	1.9	4.7	2.0
25	13	16	13	11	15	11	5.6	5.9	37	2.1	4.4	1.7
26	13	35	13	9.9	14	11	5.6	10	21	2.0	4.2	1.6
27	12	24	13	9.6	14	10	5.6	10	19	1.9	3.8	1.4
28	11	30	13	9.6	14	10	5.6	8.0	18	1.4	3.4	1.2
29	11	47	12	9.6	---	10	5.6	6.9	14	1.1	3.0	3.2
30	11	32	13	9.5	---	10	5.6	6.8	13	1.1	2.5	2.6
31	11	---	13	9.3	---	10	---	15	---	1.1	2.3	---
TOTAL	628.8	691	548	380.5	770.6	378	217.9	249.6	1852.8	125.0	102.5	81.2
MEAN	20.3	23.0	17.7	12.3	27.5	12.2	7.26	8.05	61.8	4.03	3.31	2.71
MAX	165	72	53	18	222	15	9.9	23	770	11	6.8	5.9
MIN	9.5	11	12	9.3	9.3	10	5.6	4.5	8.8	1.1	1.0	1.2
AC-FT	1250	1370	1090	755	1530	750	432	495	3680	248	203	161

CAL YR 1985 TOTAL 17795.6 MEAN 48.8 MAX 1480 MIN 3.1 AC-FT 35300
WTR YR 1986 TOTAL 6025.9 MEAN 16.5 MAX 770 MIN 1.0 AC-FT 11950

08176990 COLETO CREEK RESERVOIR INFLOW (GUADALUPE DIVERSION) NEAR SCHROEDER, TX

LOCATION.--Lat 28°50'21", long 97°11'20", Victoria County, Hydrologic Unit 12100204, on right bank of small tributary 1,200 ft upstream from Coleto Creek and 2.6 mi northeast of Schroeder.

PERIOD OF RECORD.--March 1980 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 100.52 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Discharge represents flow diverted by pumping from the Guadalupe River to be used as makeup water for the Central Power and Light Co. generating plant on Coleto Creek Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 36 ft³/s Apr. 2, 11, Sept. 11, 1980; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 35 ft³/s July 29-31; no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	.00	.00	.00	.17	.00	.00	.00	.00	.00	34	31
2	.00	.00	.00	.00	.11	.00	.00	.00	.00	11	32	31
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	33	30
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	33	30
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	33	31
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	32	30
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	31
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	31
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	29	31
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	32	31
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	31
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	31
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	31
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	31
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	31
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	32
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	32	32
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	32	32
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	32	32
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	32	32
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	32
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	32
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	32
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31	32
25	.00	.00	.00	.00	.00	.42	.00	.00	.00	9.3	31	31
26	.00	.00	.00	.00	.00	.19	.00	.00	.00	19	31	31
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	19	31	31
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	28	31	31
29	.00	.00	.00	.00	---	.00	.00	.00	.00	35	31	30
30	.00	.00	.00	10	---	.00	.00	.00	.00	35	31	30
31	.00	---	.00	.28	---	.00	---	.00	---	35	31	---
TOTAL	20.00	.00	.00	10.28	.28	.61	.00	.00	.00	191.41	975	934
MEAN	.65	.00	.00	.33	.01	.02	.00	.00	.00	6.17	31.5	31.1
MAX	20	.00	.00	10	.17	.42	.00	.00	.00	35	34	32
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	29	30
AC-FT	40	.00	.00	20	.6	1.2	.00	.00	.00	380	1930	1850

CAL YR 1985 TOTAL 1783.38 MEAN 4.89 MAX 35 MIN .00 AC-FT 3540
WTR YR 1986 TOTAL 2131.58 MEAN 5.84 MAX 35 MIN .00 AC-FT 4230

08177300 PERDIDO CREEK AT FARM ROAD 622 NEAR FANNIN, TX

LOCATION.--Lat 28°45'05", long 97°19'01", Goliad County, Hydrologic Unit 12100204, at right downstream end of bridge on Farm Road 622, 1.2 mi downstream from Farmer Creek, 3.1 mi upstream from Kilgore Creek, and 6.1 mi northwest of Fannin.

DRAINAGE AREA.--28.0 mi^2.

PERIOD OF RECORD.--June 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 134.66 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Apr. 1-20. Records good. No known diversion above gage. Gage-height telemeter at station.

AVERAGE DISCHARGE.--8 years, 5.66 ft^3/s (2.74 in/yr), 4,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,600 ft^3/s May 29, 1981 (gage height, 13.80 ft, from floodmark), from rating curve extended above 1,160 ft^3/s; maximum gage height, 14.60 ft Oct. 31, 1981; no flow July 17 to Aug. 5, 1986.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 20, 1976, reached a stage of 26.28 ft, and flood of Sept. 15, 16, 1967, reached a stage of 26.08 ft, from information by the State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 24	2400	*11	*4.34				

Minimum daily discharge, no flow July 17 to Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	.41	.47	.33	.82	.78	.67	.30	.36	.07	.00	.22
2	.45	.62	.38	.33	.86	.82	.65	.28	.22	.06	.00	.11
3	.30	.47	.38	.33	1.9	1.0	.64	.27	.19	.06	.00	.06
4	.27	.42	.38	.33	2.7	1.3	.64	.24	.15	.05	.00	.08
5	.19	.41	.37	.33	1.0	.95	.64	.23	.20	.05	.00	.11
6	.20	.43	.33	.33	.86	.94	.62	.19	.19	.05	1.3	.52
7	.20	.43	.36	.40	.86	.86	.60	.17	.11	.06	.13	.30
8	.22	.43	.38	1.2	.84	.86	.60	.19	.17	.06	.06	.81
9	.23	.43	.38	.51	.78	.86	.50	.20	.15	.05	.04	.34
10	.20	.43	.38	.44	.78	.85	.50	1.7	.12	.04	.03	.21
11	.20	.67	.85	.43	.78	.78	.45	.36	.27	.03	.03	.13
12	.19	.50	.54	.43	.78	1.2	.45	.22	.54	.01	.31	.12
13	.19	.43	.41	.42	.80	.70	.40	.17	1.1	.02	.14	.12
14	.20	.50	.34	.38	.86	.73	.40	.17	.25	.02	.06	.13
15	.56	.53	.33	.38	.82	.88	.35	.17	.17	.01	.06	.14
16	.26	.60	.33	.38	.78	.76	.35	.17	.13	.01	.06	.13
17	.30	.56	.39	.38	.77	.70	.30	.20	.10	.00	.05	.11
18	.37	.55	.39	.42	.70	.70	.25	.20	.19	.00	.05	.11
19	.36	.49	.38	.49	.70	.70	.25	.12	.19	.00	.04	.11
20	.33	.40	.38	.49	.70	.70	.25	.12	.15	.00	.03	.33
21	.34	.38	.38	.49	.70	.70	.24	.11	.09	.00	.16	.18
22	.38	.45	.38	.46	.70	.70	.21	.11	.08	.00	.18	.18
23	.39	.58	.37	.47	.75	.70	.26	.10	.10	.00	.15	.16
24	.39	.65	.32	.49	.78	.68	.27	.10	.72	.00	.12	.14
25	.42	.62	.28	.49	.78	.67	.22	.10	1.7	.00	.07	.12
26	.48	.56	.31	.49	.78	.70	.21	.38	.24	.00	.06	.10
27	.37	1.6	.33	.49	.78	.70	.20	.23	.14	.00	.06	.09
28	.34	.60	.33	.60	.78	.70	.20	.16	.10	.00	.05	.11
29	.36	.56	.33	.72	---	.70	.20	.13	.07	.00	.05	.40
30	.38	.56	.33	.78	---	.70	.35	.10	.07	.00	.05	.23
31	.43	---	.33	.78	---	.68	---	.90	---	.00	.05	---
TOTAL	12.10	16.27	11.84	14.99	25.14	24.70	11.87	8.09	8.26	.65	3.39	5.90
MEAN	.39	.54	.38	.48	.90	.80	.40	.26	.28	.02	.11	.20
MAX	2.6	1.6	.85	1.2	2.7	1.3	.67	1.7	1.7	.07	1.3	.81
MIN	.19	.38	.28	.33	.70	.67	.20	.10	.07	.00	.00	.06
CFSM	.01	.02	.01	.02	.03	.03	.01	.01	.01	.00	.00	.01
IN.	.02	.02	.02	.02	.03	.03	.02	.01	.01	.00	.00	.01
AC-FT	24	32	23	30	50	49	24	16	16	1.3	6.7	12

CAL YR 1985 TOTAL 1432.71 MEAN 3.93 MAX 231 MIN .09 CFSM .14 IN. 1.90 AC-FT 2840
WTR YR 1986 TOTAL 143.20 MEAN .39 MAX 2.7 MIN .00 CFSM .01 IN. .19 AC-FT 284

08177360 COLETO CREEK RESERVOIR (CONDENSER NO. 1) NEAR FANNIN, TX

LOCATION.--Lat 28°43'24", long 97°12'16", Goliad County, Hydrologic Unit 12100204, on right bank of discharge canal 4,000 ft below Central Power and Light powerplant, 2.7 mi northeast of Fannin, and 13.3 mi southwest of Victoria.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1980 to current year.

INSTRUMENTATION.--Beginning May 1980, water temperature is recorded continuously at this station.

REMARKS: Prior to Feb. 19, 1982, water temperature recording site was 4,000 ft upstream at Condenser No. 1 cooling water outlet.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 40.5°C on several days during summer months of 1983, 1985, and 1986; minimum, 4.5°C Dec. 26, 1983.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 40.5°C July 4, 5, 24, Aug. 20; minimum, 15.5°C Jan. 10.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	31.0	28.5	30.0	25.0	24.0	24.5	18.5	16.0	16.5	28.0	24.0	26.0
2	31.0	29.0	30.5	25.0	23.5	24.5	25.5	19.0	23.5	25.5	22.0	23.5
3	31.0	30.5	30.5	23.5	22.5	23.0	25.0	17.0	20.5	22.0	21.5	21.5
4	31.0	26.5	29.0	23.5	23.0	23.0	23.5	22.5	23.0	22.0	21.0	21.5
5	25.5	23.0	23.5	23.0	22.0	22.5	22.0	21.5	21.5	21.5	19.5	20.5
6	24.5	23.5	24.0	22.5	21.5	22.0	21.0	20.5	21.0	22.5	18.0	20.5
7	24.5	24.0	24.0	22.0	21.5	22.0	21.0	20.0	20.5	22.5	19.5	21.5
8	24.0	23.5	24.0	23.0	22.0	22.5	20.5	14.0	17.0	23.0	19.0	21.5
9	24.0	24.0	24.0	23.5	22.5	23.0	22.5	15.0	20.5	23.5	20.0	22.5
10	24.5	23.5	24.0	23.5	22.5	23.0	23.0	20.5	22.0	23.0	19.5	22.0
11	25.5	24.0	24.5	22.0	21.0	21.5	23.5	22.5	23.0	22.5	21.0	21.5
12	25.5	24.5	25.0	21.5	20.5	21.0	24.0	23.0	23.5	21.0	18.5	19.5
13	25.5	25.0	25.0	21.0	20.5	20.5	25.0	23.5	24.0	18.5	18.0	18.0
14	25.5	24.5	25.0	21.0	20.5	20.5	26.0	25.0	25.5	18.0	17.5	18.0
15	26.5	25.0	25.5	22.0	20.5	21.0	27.0	25.0	26.5	18.5	17.5	18.0
16	26.5	25.5	26.0	25.0	21.0	22.0	27.0	25.0	26.0	19.0	17.0	18.5
17	26.5	25.0	25.5	21.5	20.5	21.0	27.0	24.0	26.0	20.0	18.0	19.0
18	26.0	25.0	25.5	21.0	20.5	21.0	27.5	24.5	26.5	20.5	18.5	19.5
19	26.0	25.5	25.5	20.5	18.5	19.0	28.5	27.5	28.0	21.0	17.0	19.5
20	26.0	25.5	25.5	---	---	---	29.0	26.5	28.0	20.0	17.5	18.5
21	25.5	25.0	25.5	17.0	17.0	17.0	28.0	25.0	27.0	18.0	17.0	17.5
22	25.0	23.5	24.0	16.5	16.0	16.0	28.0	25.5	27.0	17.5	17.5	17.5
23	23.5	22.0	22.5	16.0	15.5	15.5	27.5	24.0	26.5	17.5	17.5	17.5
24	22.0	21.0	21.5	16.0	15.5	15.5	28.5	25.0	27.5	18.5	17.0	17.5
25	22.5	22.0	22.0	17.5	16.0	16.5	28.0	24.5	26.0	19.0	15.0	18.0
26	23.5	22.5	22.5	24.5	17.5	22.0	26.5	23.5	25.5	19.5	16.0	18.5
27	23.5	23.0	23.0	24.0	23.0	24.0	27.0	23.0	25.5	21.0	17.5	19.5
28	24.0	23.5	23.5	24.0	23.5	23.5	28.0	24.0	26.5	21.0	17.0	19.5
29	24.0	23.5	24.0	24.0	22.0	23.5	28.5	25.5	27.5	27.0	19.5	24.0
30	24.5	24.0	24.0	24.0	19.5	22.0	29.0	26.0	28.0	27.5	21.0	23.5
31	24.5	24.0	24.5	---	---	---	28.5	26.0	28.0	21.0	18.5	19.5
MONTH	31.0	21.0	25.0	25.0	15.5	21.0	29.0	14.0	24.5	28.0	15.0	20.0

08177360 COLETO CREEK RESERVOIR (CONDENSER NO. 1) NEAR FANNIN, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	19.0	17.0	18.0	25.5	23.0	25.0	29.0	26.0	28.5	27.0	24.5	25.5
2	17.0	15.5	16.5	26.5	22.5	25.0	30.0	28.0	29.5	27.0	26.0	26.5
3	16.5	16.5	16.5	27.0	23.5	26.0	30.0	26.5	29.0	26.5	25.5	26.0
4	16.5	15.5	16.0	27.0	25.0	26.5	29.5	27.5	29.0	26.0	25.5	26.0
5	16.5	15.5	16.0	31.5	25.5	28.0	30.0	26.5	28.5	26.0	25.0	25.5
6	17.0	16.5	16.5	31.5	30.0	31.0	29.5	26.5	27.0	25.5	25.0	25.0
7	17.0	16.5	17.0	32.5	29.0	31.0	27.5	26.0	27.0	25.5	25.0	25.0
8	18.0	17.0	17.5	33.5	30.5	32.0	27.0	26.0	26.5	26.0	25.0	25.0
9	19.5	16.5	18.0	33.5	28.0	30.0	27.0	21.5	25.0	26.0	25.0	25.5
10	20.5	16.0	18.5	29.5	25.5	28.0	21.5	18.5	21.0	27.0	25.5	26.0
11	20.0	18.0	19.0	29.0	26.5	28.0	20.0	18.0	19.0	26.5	26.0	26.0
12	20.5	18.5	19.5	29.0	26.0	28.0	21.0	20.0	20.5	26.5	26.0	26.0
13	19.5	16.0	18.5	29.5	27.0	29.0	22.0	20.5	21.0	26.5	26.0	26.0
14	14.0	12.0	12.5	29.5	24.5	26.5	23.0	21.5	22.0	26.5	26.0	26.5
15	13.0	12.0	12.5	26.5	24.0	26.0	23.0	22.0	22.5	26.0	25.5	25.5
16	21.5	12.5	15.0	26.0	24.5	25.5	22.5	21.5	22.0	27.5	26.0	26.5
17	21.5	19.5	21.0	26.5	25.5	26.0	22.5	21.5	22.0	27.5	26.5	26.5
18	22.5	19.5	21.5	27.0	24.5	26.0	23.5	21.5	22.5	27.5	26.0	27.0
19	22.5	19.5	22.0	26.5	24.0	26.0	23.0	22.0	22.5	29.0	26.5	27.5
20	23.5	21.0	22.5	27.5	24.5	26.5	22.5	22.0	22.5	35.0	29.0	33.5
21	24.5	21.5	23.5	27.5	25.5	27.0	23.0	22.5	22.5	34.5	32.0	33.5
22	25.5	22.5	24.5	28.0	25.0	27.0	23.0	22.5	23.0	35.5	31.0	34.0
23	25.5	23.5	25.0	27.5	25.5	27.0	23.5	23.0	23.0	36.0	33.0	35.0
24	25.0	22.5	24.0	28.5	24.5	27.0	25.0	23.5	24.0	37.0	33.5	35.5
25	25.0	22.5	24.0	29.5	28.0	28.5	25.0	24.0	24.5	37.0	33.5	36.0
26	25.5	22.5	24.5	30.0	28.5	29.5	24.5	24.0	24.5	37.0	33.5	36.0
27	25.5	24.0	25.0	30.5	29.5	29.5	24.5	24.5	24.5	36.0	35.0	36.0
28	25.0	25.0	25.0	29.5	29.0	29.0	25.0	24.5	24.5	36.0	35.0	35.5
29	---	---	---	29.0	28.5	29.0	25.5	24.0	24.5	36.5	35.0	35.5
30	---	---	---	29.0	28.5	29.0	26.0	24.5	25.5	36.5	35.0	36.0
31	---	---	---	29.0	27.0	28.5	---	---	---	37.0	35.5	36.0
MONTH	25.5	12.0	19.5	33.5	22.5	28.0	30.0	18.0	24.5	37.0	24.5	29.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	37.5	35.0	36.5	38.0	35.0	37.0	39.5	38.5	39.0	39.5	38.5	39.0
2	38.0	36.0	37.0	38.0	35.0	37.0	39.5	38.5	39.0	39.5	38.5	39.0
3	38.0	36.5	37.5	37.5	35.0	37.0	39.5	35.5	38.5	39.5	37.5	38.5
4	37.5	37.0	37.5	37.0	32.0	34.0	40.0	35.5	39.0	39.0	37.5	38.5
5	39.0	36.5	37.0	37.0	33.0	35.0	40.0	38.5	39.5	39.0	38.0	38.5
6	37.5	36.5	37.0	38.0	37.0	37.5	40.0	38.5	39.0	39.0	38.0	38.5
7	37.5	37.0	37.0	38.5	37.5	38.0	40.0	38.5	39.0	39.0	38.0	38.5
8	38.5	37.5	38.0	38.5	37.5	38.0	40.0	38.5	39.0	38.5	38.0	38.5
9	38.5	37.5	38.0	38.0	37.0	37.5	39.5	38.5	39.0	39.0	30.0	35.0
10	39.5	38.0	38.5	37.5	36.5	37.0	39.5	38.5	39.0	39.0	38.0	38.5
11	39.5	38.0	38.5	38.5	36.0	37.0	39.5	38.5	39.0	38.5	38.0	38.5
12	39.0	37.0	38.5	39.0	37.5	38.0	39.5	38.5	39.0	38.5	37.5	38.0
13	38.5	36.5	37.5	39.0	38.0	38.5	39.5	38.0	39.0	38.5	37.5	38.0
14	38.5	35.0	37.5	39.0	38.0	38.5	39.5	38.5	39.0	38.5	37.5	38.0
15	39.0	37.0	38.5	38.5	37.5	38.0	40.0	38.5	39.5	38.5	37.5	38.0
16	39.5	37.0	39.0	38.5	37.5	38.0	40.0	39.0	39.5	37.5	36.0	37.0
17	39.5	38.5	39.0	38.5	37.5	38.0	40.0	38.5	39.5	37.5	35.5	37.0
18	39.5	37.5	38.5	39.0	37.5	38.5	40.0	38.5	39.5	37.5	36.5	37.0
19	38.0	35.5	37.0	39.0	38.5	38.5	40.0	38.5	39.0	37.5	36.0	37.0
20	37.0	34.5	36.5	39.0	38.5	38.5	39.5	38.5	39.0	37.5	36.5	37.0
21	37.0	34.0	36.0	39.5	38.0	39.0	39.5	39.0	39.0	37.5	36.5	37.0
22	37.0	35.5	36.5	39.5	38.0	39.0	40.0	39.0	39.5	37.5	37.0	37.0
23	37.5	35.5	37.0	39.5	38.0	38.5	40.0	39.0	39.5	38.0	37.0	37.5
24	38.0	36.5	37.0	39.5	38.0	38.5	39.5	39.0	39.0	37.5	33.5	36.5
25	38.0	37.0	37.5	39.5	38.0	39.0	40.0	39.0	39.5	37.5	35.5	37.0
26	38.0	37.0	37.5	39.5	38.5	39.0	40.5	39.0	39.5	37.0	35.5	36.0
27	38.0	37.0	37.5	39.5	38.0	39.0	40.0	39.5	40.0	35.5	34.0	34.5
28	37.5	36.5	37.0	39.5	38.0	39.0	39.5	38.5	39.0	35.0	34.5	34.5
29	37.0	33.5	36.0	40.0	38.5	39.0	38.5	38.0	38.0	35.0	33.5	34.5
30	37.5	33.0	36.0	39.5	38.5	39.0	39.0	38.0	38.5	33.5	27.5	30.0
31	---	---	---	39.5	38.5	39.0	39.5	38.5	39.0	---	---	---
MONTH	39.5	33.0	37.5	40.0	32.0	38.0	40.5	35.5	39.0	39.5	27.5	37.0
YEAR	40.5	12.0	28.5									

08177360 COLETO CREEK RESERVOIR (CONDENSER NO. 1) NEAR FANNIN, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.0	27.0	27.5	25.5	25.0	25.0	25.0	23.5	24.5	19.5	19.0	19.0
2	28.5	27.0	27.5	25.0	24.0	24.5	24.0	21.5	22.0	21.0	19.0	19.5
3	29.5	28.0	28.5	24.0	23.0	23.5	22.5	20.5	21.0	21.0	19.0	20.0
4	33.0	28.5	29.5	26.5	23.5	24.0	22.0	20.5	21.0	20.5	20.0	20.0
5	29.5	28.5	29.0	26.5	23.5	25.0	21.5	20.5	21.0	20.5	19.0	19.5
6	28.5	27.5	28.0	27.0	24.0	25.5	21.5	20.5	21.0	21.5	19.0	19.5
7	29.0	27.5	28.5	27.0	24.0	25.5	21.5	20.5	21.0	21.0	18.5	19.5
8	32.0	28.0	29.0	27.5	24.0	26.0	21.5	21.0	21.5	21.0	18.0	19.5
9	31.5	28.5	29.5	28.5	25.0	26.5	22.5	21.5	22.0	17.0	16.0	16.5
10	32.0	29.0	30.0	29.0	25.5	26.5	23.0	18.0	20.5	16.5	15.5	16.0
11	33.5	29.5	30.5	30.5	26.0	28.5	23.5	21.0	22.5	17.0	16.0	16.5
12	33.5	29.5	31.0	30.5	26.5	28.5	23.0	20.0	21.0	17.5	16.5	17.0
13	33.5	30.5	31.5	31.0	26.5	28.5	22.0	18.5	20.0	18.5	17.0	17.5
14	35.0	30.5	32.0	30.5	27.0	28.0	21.0	17.0	18.5	19.0	17.0	18.0
15	31.0	30.5	30.5	30.5	27.0	28.5	19.0	16.5	17.0	18.5	17.5	18.0
16	31.0	30.0	30.5	27.0	26.0	26.5	18.5	17.0	17.5	21.5	18.0	19.0
17	32.5	30.0	31.0	27.0	26.0	26.5	18.0	17.5	17.5	21.5	18.5	20.0
18	33.5	30.5	31.5	29.5	26.5	27.5	19.0	17.5	18.0	20.5	19.0	20.0
19	33.0	31.0	31.5	29.5	27.0	27.5	18.0	17.0	17.5	24.5	19.5	22.5
20	31.0	30.5	31.0	28.0	24.5	26.0	18.0	17.0	17.5	26.0	23.5	24.5
21	31.0	30.0	30.5	25.5	24.0	24.5	18.5	17.5	18.0	28.0	23.5	25.0
22	31.0	30.0	30.5	25.0	24.0	24.5	19.0	18.0	18.5	27.5	23.5	25.0
23	34.5	30.5	32.0	25.5	24.5	25.0	19.5	18.5	19.0	27.5	23.0	24.5
24	33.0	30.5	31.5	27.0	25.5	26.0	19.0	18.5	18.5	25.0	24.0	24.0
25	32.0	31.0	31.5	29.0	26.0	27.0	18.5	17.5	18.0	27.5	24.5	25.5
26	31.5	31.0	31.0	30.0	26.5	27.5	17.5	16.5	17.0	24.5	24.0	24.0
27	30.5	29.5	30.0	27.5	26.0	26.5	18.5	17.5	18.0	29.0	23.0	26.0
28	29.5	27.5	28.5	26.0	24.5	25.0	19.0	18.5	18.5	29.5	28.0	29.0
29	27.0	26.0	26.5	24.5	24.0	24.0	19.5	18.5	19.0	30.5	28.0	29.5
30	26.0	25.0	25.5	26.5	24.0	24.5	20.0	19.0	19.5	31.0	28.5	30.0
31	25.5	24.5	25.0	---	---	---	21.0	20.0	20.0	31.0	28.5	30.5
MONTH	35.0	24.5	29.5	31.0	23.0	26.0	25.0	16.5	19.5	31.0	15.5	22.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	31.5	24.5	29.0	26.0	25.0	25.5	22.5	21.5	22.0	33.5	31.5	32.5
2	32.5	29.5	31.5	26.5	22.5	25.5	22.5	21.5	22.0	33.5	32.0	33.0
3	33.0	26.5	29.5	27.0	23.0	26.0	22.0	21.5	22.0	32.5	29.5	31.5
4	26.5	22.5	24.5	27.5	25.0	26.5	22.5	22.0	22.0	32.5	32.0	32.5
5	27.0	25.0	26.0	27.5	25.5	27.0	23.0	22.0	22.5	33.0	30.5	32.5
6	27.0	25.0	26.0	27.5	26.5	27.0	23.0	22.5	23.0	34.0	31.5	33.0
7	26.5	26.0	26.5	28.0	26.0	27.0	24.0	23.0	23.5	34.0	32.0	33.0
8	26.5	25.0	26.0	28.0	25.5	27.5	25.0	23.0	23.5	34.0	31.5	33.0
9	25.0	23.5	24.0	28.5	25.5	27.5	24.0	23.0	23.5	33.5	27.5	32.5
10	23.5	22.5	23.0	29.5	26.5	28.5	23.0	22.0	22.0	27.5	27.0	27.0
11	22.5	21.5	22.0	29.5	26.5	29.0	22.5	21.5	22.0	29.5	26.5	27.5
12	22.0	21.0	21.5	29.5	26.5	29.0	22.5	22.0	22.5	35.5	31.0	33.5
13	21.5	21.0	21.0	29.5	27.0	28.5	24.5	22.5	23.5	35.5	31.5	34.5
14	22.5	21.5	22.0	28.5	21.0	26.0	27.0	23.5	24.5	35.0	32.0	33.5
15	23.5	21.5	23.0	21.5	20.5	21.0	31.5	26.0	28.5	34.0	32.0	33.5
16	25.0	22.0	23.5	22.0	21.0	21.5	30.5	27.0	29.5	34.0	32.5	33.5
17	26.0	22.0	24.5	21.5	21.0	21.5	30.5	26.5	29.0	34.5	33.5	33.5
18	26.5	24.0	25.5	22.0	21.5	21.5	30.5	27.5	29.5	33.5	30.0	32.0
19	26.5	23.5	25.5	21.5	19.5	20.5	31.5	27.5	30.0	33.5	29.0	32.0
20	27.5	25.5	27.0	20.0	19.0	19.5	31.5	27.0	29.5	34.5	31.5	33.5
21	27.5	25.5	26.5	20.5	19.0	19.5	32.0	27.0	30.0	35.0	33.0	34.0
22	26.5	25.5	26.0	20.5	19.0	19.5	32.0	27.0	30.5	35.5	33.5	34.5
23	26.0	24.0	25.5	20.5	18.5	19.5	32.5	28.5	31.0	35.5	27.0	33.0
24	26.5	24.0	25.5	20.0	19.0	19.5	32.5	28.0	30.5	36.0	26.5	31.0
25	27.0	25.0	26.0	20.0	19.0	19.5	33.0	28.5	31.5	36.5	35.0	35.5
26	27.5	24.0	26.5	20.5	19.5	19.5	33.0	31.0	32.0	35.5	34.5	35.0
27	27.0	23.0	26.0	20.0	19.5	20.0	33.0	31.5	32.5	35.5	35.0	35.0
28	26.5	23.5	25.5	21.0	20.0	20.5	33.5	31.0	32.5	---	---	---
29	---	---	---	21.5	20.5	21.0	33.5	30.0	32.5	---	---	---
30	---	---	---	22.0	20.5	21.0	34.0	30.0	32.5	---	---	---
31	---	---	---	22.5	21.0	21.5	---	---	---	---	---	---
MONTH	33.0	21.0	25.5	29.5	18.5	23.5	34.0	21.5	27.0	36.5	26.5	33.0

08177360 COLETO CREEK RESERVOIR (CONDENSER NO. 1) NEAR FANNIN, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	40.0	39.0	39.5	40.0	32.0	37.5	38.5	36.0	37.5
2	---	---	---	39.5	39.0	39.5	32.5	31.0	31.5	38.5	35.0	37.5
3	---	---	---	40.0	39.5	39.5	32.0	31.0	31.5	39.0	36.5	38.0
4	---	---	---	40.5	40.0	40.0	40.0	32.5	38.0	39.0	37.5	38.5
5	---	---	---	40.5	39.5	40.0	39.5	39.0	39.5	39.0	37.5	38.5
6	31.5	29.0	29.5	40.0	39.5	39.5	39.0	37.5	38.0	38.5	37.5	38.5
7	30.5	28.5	29.5	40.0	39.0	39.5	39.0	38.0	38.5	38.5	37.5	38.0
8	37.5	28.5	32.0	40.0	39.0	39.5	39.0	37.5	38.5	37.5	36.5	37.0
9	38.0	37.0	37.5	40.0	39.0	39.5	39.5	38.0	39.0	37.5	36.0	37.0
10	38.0	36.0	37.0	40.0	39.0	39.5	39.5	37.5	39.0	38.0	37.0	37.5
11	38.0	37.0	37.5	39.5	38.5	39.0	39.5	38.5	39.0	38.5	37.0	38.0
12	37.5	36.0	37.0	39.0	37.5	38.5	39.0	38.0	38.5	38.5	37.5	38.0
13	37.5	37.0	37.0	38.5	37.5	38.5	39.5	37.5	38.5	39.0	37.5	38.0
14	38.5	37.5	37.5	39.0	37.0	38.0	39.5	39.0	39.0	39.0	37.5	38.5
15	38.5	37.5	38.0	39.0	38.0	38.5	39.5	38.5	39.0	39.0	38.0	38.5
16	39.0	37.5	38.0	39.0	37.5	38.5	39.5	37.5	38.5	39.0	37.5	38.5
17	39.0	37.5	38.0	39.5	38.0	39.0	39.5	37.5	39.0	39.0	37.5	38.5
18	38.5	37.5	38.0	39.5	38.5	39.0	40.0	37.5	39.0	38.5	37.5	38.5
19	39.0	38.0	38.0	40.0	38.5	39.5	40.0	39.0	39.5	38.5	35.5	38.0
20	39.0	38.0	38.5	40.0	38.0	39.0	40.5	39.0	40.0	38.5	37.5	38.0
21	39.5	37.5	39.0	40.0	38.0	39.0	40.0	39.0	39.5	38.5	36.5	38.0
22	39.5	38.5	39.0	40.0	38.0	39.0	39.0	36.0	38.0	38.5	37.0	38.0
23	39.5	38.5	39.0	40.0	39.0	39.5	38.5	35.5	37.5	38.5	36.5	38.0
24	39.0	38.0	38.5	40.5	39.0	39.5	38.5	34.5	37.0	38.5	37.5	38.0
25	39.5	37.5	39.0	40.0	36.5	39.0	38.5	36.5	38.0	38.0	37.5	38.0
26	40.0	38.0	39.5	40.0	39.0	39.5	39.0	37.0	38.0	38.0	37.5	38.0
27	40.0	39.0	39.5	40.0	39.0	39.5	39.0	36.0	38.0	38.0	37.5	37.5
28	40.0	39.0	39.5	40.0	39.0	39.5	39.0	37.0	38.5	38.0	37.5	37.5
29	40.0	38.5	39.5	40.0	38.5	39.5	38.5	35.0	37.5	40.0	35.0	37.5
30	40.0	39.0	39.5	40.0	39.0	39.5	38.0	34.0	37.0	38.0	36.5	37.5
31	---	---	---	40.0	39.0	39.5	38.5	34.5	37.0	---	---	---
MONTH	40.0	28.5	37.5	40.5	36.5	39.0	40.5	31.0	38.0	40.0	35.0	38.0

08177400 COLETO CREEK RESERVOIR NEAR VICTORIA, TX

LOCATION.--Lat 28°43'51", long 97°09'53", Victoria County, Hydrologic Unit 12100204, on right bank 175 ft upstream from right end of spillway of dam on Coleto Creek, 1.6 mi upstream from U.S. Highway 59, 11.6 mi west of Victoria, and 12.8 mi upstream from mouth. Record includes reservoir contents for Coleto Creek Reservoir (Turkey Creek Arm) near Schroeder (station 08177240), and Coleto Creek Reservoir (Sulphur Creek Arm) near Fannin (station 08177380).

DRAINAGE AREA.--494 mi^2.

PERIOD OF RECORD.--February 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 80.00 ft above National Geodetic Vertical Datum of 1929.
Supplementary gage (Turkey Creek Arm).--Water-stage recorder 2.7 mi upstream at datum 90.00 ft above National Geodetic Vertical Datum of 1929. Coleto Creek Reservoir (Turkey Creek Arm) near Schroeder (station 08177240) is locally known as Dike No. 2.
Supplementary gage (Sulphur Creek Arm).--Water-stage recorder 2.8 mi upstream at datum 90.00 ft above National Geodetic Vertical Datum of 1929. Coleto Creek Reservoir (Sulphur Creek Arm) near Fannin (station 08177380) is known locally as Dike No. 1.

REMARKS.--The reservoir system consists of the main reservoir (station 08177400), Turkey Creek Arm (station 08177240), and Sulphur Creek Arm (station 08177380). Figures shown below are the total contents for each of the three stations. Cooling water is diverted from the main reservoir through a Central Power and Light coal-fired generating plant, through a canal to the Sulphur Creek Arm, and then through a canal to Turkey Creek Arm where it is released back into the main reservoir. The system was built for the Guadalupe-Blanco River Authority, and storage began in February 198
The main reservoir is formed by a compacted earthfill dam 20,800 ft long, including a 2,000-foot uncontrolled spillway and a 403-foot wide concrete outlet structure with seven 40- x 28-foot spillway gates. Low-flow releases are made through the dam by a controlled 8-inch pipe. Turkey Creek Arm is formed by a compacted earthfill dam 2,250 ft long, including a 186-foot wide concrete outlet structure with two 40- x 11-foot spillway gates. Sulphur Creek Arm is formed by a compacted earthfill dam 1,030 ft long, including a 186-foot wide concrete outlet structure with two 40- by 11-foot spillway gates. Data regarding the dams and reservoirs are given in the following table:

	Coleto Creek Reservior		Turkey Creek Arm		Sulphur Creek Arm	
	Gage height (feet)	Contents (acre-feet)	Gage height (feet)	Contents (acre-feet)	Gage height (feet)	Contents (acre-feet)
Top of dam	39.0	140,200	17.0	7,330	17.0	2,550
Spillway	27.3	63,560	--	--	--	--
Top of spillway gates	19.0	34,000	12.9	4,950	12.9	1,640
Crest of spillway	-9.0	954	1.89	1,400	1.91	306

COOPERATION.--Elevations and capacity tables were provided by Forrest and Cotton Engineers, Consulting Engineers for the Guadalupe-Blanco River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 40,330 acre-ft Feb. 25, 1982; no appreciable storage prior to Feb. 28, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 37,450 acre-ft Feb. 7; minimum, 33,710 acre-ft Aug. 5.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36410	36010	36700	36690	36570	36720	35850	34670	35290	36560	33820	34310
2	36520	35980	36590	36720	36590	36770	35840	34630	35310	36520	33780	34290
3	36540	35950	36660	36770	36850	36770	35840	34530	35410	36390	33790	34260
4	36500	35940	36720	36680	36930	36700	35870	34520	35430	36290	33740	34350
5	36340	35970	36610	36520	37280	36690	35860	34470	35510	36170	33710	34350
6	36320	36020	36580	36570	37340	36610	35830	34440	35510	36070	34490	34420
7	36380	35930	36660	36600	37450	36650	35860	34340	35780	36010	34480	34480
8	36360	36020	36740	36710	37340	36600	35830	34280	35940	35980	34470	34530
9	36310	35990	36770	36670	37250	36650	35690	34250	36180	35890	34420	35050
10	36310	36020	36800	36750	37150	36640	35680	34670	36150	35790	34410	35080
11	36260	36220	36680	36720	37060	36670	35720	34740	36490	35630	34320	35070
12	36230	36300	36680	36810	37140	36580	35730	34720	36610	35500	34370	35050
13	36190	36330	36700	36700	37260	36530	35690	34680	36740	35430	34370	35010
14	36180	36400	36640	36740	37270	36500	35640	34630	37010	35340	34420	35010
15	36230	36320	36810	36820	37330	36450	35480	34600	37130	35210	34360	35140
16	36200	36440	36870	36840	37420	36380	35410	34530	37180	35090	34360	35140
17	36330	36600	36870	36800	37400	36430	35400	34500	37140	34990	34320	35120
18	36280	36610	36740	36840	37390	36370	35370	34390	37150	34920	34350	35100
19	36220	36600	36820	36780	37390	36220	35340	34330	37430	34830	34300	35080
20	36220	36370	36840	36830	37390	36060	35180	34290	36940	34740	34260	35110
21	36150	36420	36850	36830	37170	36040	35200	34200	36960	34610	34310	35100
22	36670	36470	36960	36700	37020	35980	35050	34160	36900	34500	34330	35140
23	36690	36520	36880	36670	37010	36000	34960	34090	36890	34380	34450	35180
24	36680	36570	36790	36760	37040	35960	34890	34030	37250	34270	34480	35170
25	36610	36600	36620	36640	37060	35970	34880	34320	36960	34190	34470	35170
26	36550	36620	36770	36530	37060	35970	34820	34370	36890	34100	34420	35120
27	36470	36750	36890	36410	36940	35970	34740	35070	36820	34040	34420	35120
28	36340	36690	36750	36560	36680	35930	34690	35030	36740	33970	34380	35120
29	36190	36800	36740	36580	---	35920	34690	34990	36670	33930	34320	35090
30	36110	36990	36870	36550	---	35920	34720	35110	36570	33890	34310	35090
31	36000	---	36720	36570	---	35890	---	35250	---	33860	34290	---
MAX	36690	36990	36960	36840	37450	36770	35870	35250	37430	36560	34490	35180
MIN	36000	35930	36580	36410	36570	35890	34690	34030	35290	33860	33710	34260
(ϕ)	-30	+990	-270	-150	+110	-790	-1170	+530	+1320	-2710	+430	+800

CAL YR 1985 MAX 38120 MIN 33690 (ϕ) -100
WTR YR 1986 MAX 37450 MIN 33710 (ϕ) -940

(ϕ) Change in contents, in acre-feet.

08177410 COLETO CREEK RESERVOIR (OUTFLOW) NEAR VICTORIA, TX

LOCATION.--Lat 28°43'54", long 97°09'50", Victoria County, Hydrologic Unit 12100204, on top of Coleto Creek Dam at Pier No. 4, 1.6 mi upstream from U.S. Highway 59, and 11.6 mi west of Victoria.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1980 to current year.

INSTRUMENTATION: Beginning May 1980, water temperature id recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 32.5°C July 16, 1983; minimum, 7.5°C Dec. 31, 1983, Jan. 1, 2, 1984.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 30.0°C Aug. 6, 11, 17; minimum 11.0°C Jan. 14-16.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.0	23.5	23.5	22.0	21.5	21.5	16.0	16.0	16.0	19.5	17.5	18.0
2	23.5	23.0	23.0	22.0	21.5	22.0	16.0	16.0	16.0	19.5	17.5	18.5
3	23.0	22.5	23.0	22.0	22.0	22.0	16.5	16.0	16.0	17.5	16.0	16.5
4	22.5	22.5	22.5	22.0	22.0	22.0	16.5	16.0	16.5	16.0	15.5	16.0
5	22.5	22.0	22.5	22.0	21.5	22.0	16.0	15.5	16.0	15.5	15.5	15.5
6	22.5	22.0	22.5	21.5	21.0	21.5	15.5	15.0	15.0	15.5	14.0	15.0
7	22.5	22.0	22.5	21.0	21.0	21.0	15.0	14.5	15.0	14.5	14.0	14.5
8	22.5	22.0	22.5	21.0	21.0	21.0	14.5	14.0	14.5	14.5	14.0	14.5
9	22.5	22.5	22.5	21.5	21.0	21.0	14.0	13.0	13.5	14.0	13.5	14.0
10	22.5	22.5	22.5	21.5	21.0	21.0	13.5	13.0	13.0	14.0	13.5	13.5
11	22.5	22.5	22.5	21.0	20.5	20.5	13.5	13.0	13.0	15.0	14.0	14.5
12	22.5	22.5	22.5	20.5	20.0	20.5	13.5	13.5	13.5	14.5	13.5	14.0
13	22.5	22.5	22.5	20.0	20.0	20.0	14.0	13.5	13.5	13.0	12.5	12.5
14	22.5	22.5	22.5	20.0	19.5	20.0	14.0	14.0	14.0	12.5	12.0	12.0
15	22.5	22.5	22.5	20.0	19.5	20.0	14.0	14.0	14.0	12.0	11.0	11.5
16	22.5	22.5	22.5	20.0	19.5	20.0	14.5	14.0	14.0	11.0	10.5	11.0
17	22.5	22.5	22.5	19.5	19.5	19.5	14.5	14.5	14.5	11.0	10.5	10.5
18	22.5	22.5	22.5	20.0	19.5	19.5	14.5	14.5	14.5	10.5	10.0	10.5
19	23.0	22.5	22.5	19.5	19.5	19.5	15.0	14.5	14.5	10.5	10.0	10.5
20	23.0	22.5	23.0	---	---	---	15.0	14.5	15.0	11.5	10.5	11.0
21	23.5	23.0	23.5	18.0	18.0	18.0	15.0	15.0	15.0	11.0	10.5	10.5
22	23.5	23.0	23.0	17.5	17.0	17.5	15.0	15.0	15.0	10.5	10.5	10.5
23	23.0	22.5	22.5	17.0	16.5	17.0	15.5	15.0	15.5	10.5	10.0	10.5
24	22.5	22.0	22.5	16.5	16.0	16.5	15.5	15.5	15.5	10.5	10.5	10.5
25	22.0	22.0	22.0	---	---	---	16.0	15.5	15.5	10.5	10.5	10.5
26	22.0	21.5	22.0	---	---	---	16.0	16.0	16.0	10.5	10.0	10.0
27	22.0	21.5	21.5	---	---	---	16.0	16.0	16.0	10.5	10.0	10.0
28	22.0	21.5	21.5	---	---	---	16.5	16.0	16.5	10.0	10.0	10.0
29	22.0	21.5	21.5	16.0	16.0	16.0	17.0	16.5	17.0	10.0	10.0	10.0
30	21.5	21.5	21.5	16.0	16.0	16.0	17.5	17.0	17.0	10.0	10.0	10.0
31	22.0	21.5	21.5	---	---	---	18.0	17.0	17.5	12.0	10.0	10.5
MONTH	24.0	21.5	22.5	22.0	16.0	20.0	18.0	13.0	15.0	19.5	10.0	12.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.0	11.0	11.5	15.0	14.5	14.5	18.0	18.0	18.0	21.5	20.5	21.0
2	11.0	10.0	10.5	15.0	14.5	15.0	18.0	18.0	18.0	21.5	21.0	21.0
3	---	---	---	16.5	14.5	15.0	18.5	18.0	18.0	21.5	21.0	21.0
4	10.0	10.0	10.0	18.0	16.5	17.0	19.0	18.0	18.5	21.5	21.0	21.0
5	10.0	10.0	10.0	18.0	17.0	17.5	20.5	18.5	19.5	21.5	21.0	21.0
6	10.0	10.0	10.0	18.0	17.5	17.5	20.5	19.5	20.0	21.5	21.0	21.0
7	10.0	9.5	10.0	18.0	17.5	17.5	20.5	19.5	20.0	21.5	21.0	21.0
8	10.0	9.5	10.0	18.0	17.5	17.5	20.5	19.5	20.0	21.5	21.0	21.0
9	9.5	9.5	9.5	18.0	17.5	18.0	20.5	20.0	20.0	21.5	21.0	21.5
10	9.5	9.0	9.0	18.0	17.5	18.0	21.5	20.0	20.5	21.5	21.0	21.5
11	11.0	9.0	10.0	18.0	17.5	18.0	21.5	20.5	21.0	22.0	21.5	21.5
12	11.5	10.5	11.0	18.5	18.0	18.0	20.5	19.5	20.0	22.0	21.5	21.5
13	10.5	10.5	10.5	18.5	18.0	18.0	19.5	18.5	19.0	22.0	21.5	21.5
14	11.0	10.5	10.5	21.0	18.0	20.0	19.5	19.0	19.0	22.5	21.5	22.0
15	11.0	11.0	11.0	20.5	19.5	20.0	19.0	18.5	19.0	22.0	22.0	22.0
16	11.0	11.0	11.0	19.5	18.5	19.0	19.0	19.0	19.0	22.5	22.0	22.0
17	11.5	11.0	11.5	18.5	17.0	18.0	19.0	19.0	19.0	22.5	22.0	22.0
18	11.5	11.5	11.5	16.5	16.5	16.5	19.0	19.0	19.0	22.5	22.0	22.0
19	11.5	11.5	11.5	16.5	16.0	16.5	19.0	19.0	19.0	22.5	22.0	22.0
20	11.5	11.5	11.5	17.0	16.0	16.0	20.0	19.0	19.5	22.5	22.0	22.0
21	12.0	11.5	11.5	16.0	16.0	16.0	20.0	19.5	20.0	22.5	22.0	22.5
22	12.5	12.0	12.5	16.0	16.0	16.0	20.0	19.5	20.0	22.5	22.5	22.5
23	13.5	12.5	13.0	16.5	16.0	16.0	20.0	19.5	20.0	22.5	22.5	22.5
24	14.5	13.0	13.5	16.5	16.5	16.5	20.0	20.0	20.0	22.5	22.5	22.5
25	14.5	14.0	14.0	16.5	16.5	16.5	21.0	20.0	20.0	22.5	22.0	22.5
26	14.5	14.0	14.0	16.5	16.5	16.5	21.0	20.0	20.5	22.5	22.5	22.5
27	14.5	14.0	14.5	17.0	16.5	16.5	20.5	20.0	20.5	22.5	22.0	22.5
28	15.0	14.5	14.5	17.5	17.0	17.0	20.5	20.5	20.5	22.5	22.5	22.5
29	---	---	---	17.0	17.0	17.0	20.5	20.5	20.5	22.5	22.5	22.5
30	---	---	---	18.0	17.0	17.5	21.0	20.5	20.5	22.5	22.5	22.5
31	---	---	---	18.5	17.5	18.0	---	---	---	23.0	22.5	22.5
MONTH	15.0	9.0	11.5	21.0	14.5	17.0	21.5	18.0	19.5	23.0	20.5	22.0

08177410 COLETO CREEK RESERVOIR (OUTFLOW) NEAR VICTORIA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	23.0	22.5	22.5	24.0	24.0	24.0	25.5	25.0	25.5	---	---	---
2	23.0	22.5	22.5	24.0	24.0	24.0	25.5	25.0	25.5	---	---	---
3	23.0	22.5	23.0	24.5	24.0	24.0	25.5	25.0	25.5	---	---	---
4	23.0	22.5	23.0	27.5	24.0	26.0	25.5	25.0	25.5	---	---	---
5	23.0	22.5	23.0	27.0	25.5	26.0	25.5	---	---	29.5	---	---
6	23.0	23.0	23.0	25.5	25.0	25.0	25.0	---	---	30.0	27.5	28.5
7	23.0	23.0	23.0	25.0	25.0	25.0	---	---	---	28.0	27.5	28.0
8	23.0	23.0	23.0	25.0	24.5	25.0	---	---	---	28.5	27.5	28.0
9	23.0	23.0	23.0	25.5	24.5	25.0	---	---	---	28.5	27.5	28.0
10	23.0	23.0	23.0	25.0	24.5	25.0	---	---	---	28.5	28.0	28.0
11	23.5	23.0	23.0	25.0	25.0	25.0	---	---	---	28.5	28.0	28.0
12	23.5	23.0	23.0	25.5	24.5	25.0	---	---	---	29.0	28.0	28.5
13	23.5	23.0	23.0	25.0	25.0	25.0	---	---	---	28.5	28.0	28.0
14	23.5	23.0	23.0	25.5	25.0	25.0	---	---	---	28.5	28.0	28.0
15	23.5	23.0	23.0	25.5	25.0	25.0	---	---	---	28.5	28.0	28.5
16	23.5	23.0	23.0	25.5	25.0	25.0	---	---	---	28.5	28.0	28.0
17	23.5	23.0	23.0	25.0	25.0	25.0	---	---	---	28.5	28.0	28.5
18	23.5	23.0	23.0	25.0	25.0	25.0	---	---	---	28.5	28.0	28.0
19	23.5	23.0	23.5	25.5	25.0	25.0	---	---	---	28.0	28.0	28.0
20	23.5	23.0	23.5	25.0	25.0	25.0	---	---	---	28.0	27.5	28.0
21	23.5	23.0	23.5	25.5	25.0	25.0	25.5	24.5	25.0	28.0	27.5	28.0
22	23.5	23.0	23.5	25.5	25.0	25.0	25.5	25.0	25.5	28.0	27.5	27.5
23	24.0	23.0	23.5	25.5	25.0	25.0	26.0	25.0	25.5	28.0	27.5	27.5
24	24.0	23.5	23.5	25.5	25.0	25.0	25.5	25.0	25.5	28.0	27.5	27.5
25	24.0	23.5	23.5	25.5	25.0	25.0	25.5	25.0	25.0	27.5	27.5	27.5
26	24.0	23.5	24.0	25.5	25.0	25.0	25.5	24.5	25.5	28.0	27.5	27.5
27	24.0	23.5	24.0	25.5	25.0	25.5	25.5	25.0	25.0	27.5	27.0	27.0
28	24.0	23.5	24.0	25.5	25.0	25.0	26.0	24.5	25.5	27.0	26.5	27.0
29	24.0	23.5	24.0	25.5	25.0	25.0	26.5	25.0	25.5	26.5	26.5	26.5
30	24.0	23.5	24.0	25.5	25.0	25.0	26.5	25.5	26.0	26.5	25.0	25.5
31	---	---	---	25.5	25.0	25.0	26.0	---	---	---	---	---
MONTH	24.0	22.5	23.5	27.5	24.0	25.0	26.5	24.5	25.5	30.0	25.0	27.5
YEAR	30.0	9.0	20.0									

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25.0	23.5	24.0	21.0	21.0	21.0	20.5	20.0	20.5	13.5	13.5	13.5
2	23.5	23.0	23.5	21.0	20.5	20.5	20.0	18.5	19.0	13.5	13.5	13.5
3	23.5	22.5	23.0	20.5	19.5	20.0	18.5	17.5	18.0	13.5	13.5	13.5
4	22.5	21.5	21.5	19.5	19.5	19.5	17.5	17.0	17.5	13.5	13.5	13.5
5	21.5	21.5	21.5	19.5	19.0	19.0	17.5	17.0	17.0	14.0	13.5	14.0
6	21.5	21.5	21.5	19.0	18.5	19.0	17.5	17.0	17.0	14.5	14.0	14.0
7	21.5	21.5	21.5	18.5	18.5	18.5	17.0	16.5	17.0	14.5	14.0	14.0
8	22.0	21.5	21.5	18.5	18.5	18.5	16.5	15.5	16.0	14.0	13.5	14.0
9	22.0	22.0	22.0	18.5	18.5	18.5	15.5	15.5	15.5	13.5	13.0	13.0
10	22.0	22.0	22.0	19.0	18.5	19.0	15.5	15.5	15.5	12.5	12.5	12.5
11	23.0	22.0	22.5	19.0	19.0	19.0	17.0	15.5	16.0	12.5	12.0	12.5
12	23.0	22.5	23.0	19.0	19.0	19.0	16.5	16.0	16.5	12.0	11.5	12.0
13	23.0	23.0	23.0	19.5	19.0	19.5	16.0	15.0	15.5	11.5	11.5	11.5
14	23.0	23.0	23.0	19.5	19.5	19.5	15.0	14.0	14.5	11.5	11.0	11.5
15	23.0	23.0	23.0	20.0	19.5	19.5	14.0	13.5	13.5	11.5	11.0	11.0
16	23.5	23.0	23.0	20.0	19.5	19.5	13.5	13.5	13.5	11.5	11.0	11.0
17	23.5	23.0	23.5	20.0	19.5	20.0	13.5	13.5	13.5	11.5	11.5	11.5
18	23.5	23.5	23.5	20.5	20.0	20.0	13.5	13.5	13.5	11.5	11.5	11.5
19	23.5	23.5	23.5	21.0	20.5	20.5	13.5	13.5	13.5	11.5	11.5	11.5
20	23.5	23.5	23.5	21.5	20.5	21.5	13.5	13.0	13.0	11.5	11.5	11.5
21	23.5	23.5	23.5	21.0	20.5	21.0	13.0	13.0	13.0	12.0	11.5	11.5
22	23.5	23.5	23.5	20.5	20.0	20.0	13.0	12.5	12.5	12.0	11.5	12.0
23	23.5	23.5	23.5	20.0	20.0	20.0	12.5	12.5	12.5	12.5	12.0	12.0
24	24.0	23.5	23.5	20.0	19.5	20.0	13.0	12.5	12.5	12.5	12.5	12.5
25	24.0	23.5	24.0	20.0	19.5	20.0	13.5	13.0	13.0	13.0	12.5	12.5
26	24.0	23.5	24.0	20.0	19.5	20.0	13.0	13.0	13.0	13.0	12.5	13.0
27	25.5	23.5	24.5	20.0	20.0	20.0	13.5	13.0	13.5	13.0	13.0	13.0
28	25.5	24.0	25.0	20.0	20.0	20.0	13.5	13.0	13.5	13.5	13.0	13.0
29	24.0	23.0	23.5	20.5	20.0	20.0	13.5	13.0	13.5	14.0	13.5	14.0
30	23.0	22.0	22.5	20.5	20.0	20.5	13.5	13.0	13.5	14.0	14.0	14.0
31	22.0	21.0	21.5	---	---	---	13.5	13.0	13.0	14.0	14.0	14.0
MONTH	25.5	21.0	23.0	21.5	18.5	20.0	20.5	12.5	15.0	14.5	11.0	12.5

08177410 COLETO CREEK RESERVOIR (OUTFLOW) NEAR VICTORIA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	15.0	14.0	14.5	17.5	16.5	16.5	19.0	19.0	19.0	23.5	22.5	22.5
2	15.0	14.5	14.5	17.5	16.5	17.0	19.5	19.0	19.0	23.0	22.5	22.5
3	15.5	15.0	15.0	17.5	17.0	17.0	19.5	19.0	19.5	23.0	22.5	22.5
4	16.0	15.0	15.5	18.0	17.0	17.5	20.0	19.5	19.5	23.0	22.5	22.5
5	16.0	15.5	15.5	17.5	17.5	17.5	20.0	19.5	19.5	23.0	22.5	23.0
6	16.0	15.5	16.0	18.0	17.5	17.5	20.0	19.5	19.5	23.5	23.0	23.0
7	16.0	16.0	16.0	18.0	17.5	17.5	20.0	19.5	20.0	23.5	23.0	23.5
8	17.0	16.0	16.0	18.0	17.5	18.0	20.0	20.0	20.0	24.0	23.0	23.5
9	17.5	16.0	17.0	18.0	18.0	18.0	20.0	20.0	20.0	24.0	23.5	24.0
10	17.0	16.0	16.5	18.5	18.0	18.0	20.5	20.0	20.0	24.5	23.5	24.0
11	16.0	15.5	15.5	18.5	18.0	18.0	20.5	20.0	20.5	24.5	24.0	24.5
12	15.5	15.0	15.0	18.5	18.5	18.5	21.0	20.5	20.5	24.5	24.0	24.5
13	15.0	14.0	14.5	19.0	18.5	18.5	21.0	20.5	20.5	24.5	24.0	24.5
14	14.0	13.5	14.0	19.0	18.5	18.5	21.0	20.5	21.0	24.5	24.0	24.5
15	13.5	13.0	13.5	19.0	18.5	18.5	21.0	20.5	21.0	24.5	24.0	24.5
16	13.0	13.0	13.0	19.0	18.5	18.5	21.0	21.0	21.0	24.5	24.5	24.5
17	13.0	13.0	13.0	19.0	18.5	19.0	21.5	21.0	21.0	25.0	24.0	24.5
18	13.5	13.0	13.0	20.0	19.0	19.5	21.5	21.0	21.5	25.5	24.5	25.0
19	13.5	13.0	13.5	20.0	19.5	20.0	22.0	21.5	21.5	25.0	25.0	25.0
20	13.5	13.5	13.5	20.0	19.0	19.5	22.5	21.5	22.0	25.0	24.5	25.0
21	14.0	13.5	13.5	19.5	19.0	19.0	22.0	22.0	22.0	24.5	24.5	24.5
22	14.5	14.0	14.0	19.0	18.5	19.0	22.0	22.0	22.0	25.0	24.5	24.5
23	14.5	14.0	14.5	19.0	18.5	18.5	22.0	22.0	22.0	25.0	24.5	25.0
24	14.5	14.5	14.5	18.5	18.5	18.5	22.5	22.0	22.0	25.0	24.5	25.0
25	14.5	14.5	14.5	18.5	18.5	18.5	22.5	22.0	22.0	25.0	24.5	25.0
26	15.0	14.5	14.5	19.0	18.5	18.5	22.5	22.0	22.0	25.0	24.5	25.0
27	16.5	14.5	15.0	19.0	18.5	18.5	22.5	22.0	22.5	25.0	24.5	25.0
28	18.5	15.5	16.5	19.0	18.5	19.0	22.5	22.0	22.5	25.0	24.5	25.0
29	---	---	---	19.0	18.5	19.0	22.5	22.5	22.5	25.0	24.5	25.0
30	---	---	---	19.0	18.5	19.0	22.5	22.5	22.5	25.0	24.5	25.0
31	---	---	---	19.0	19.0	19.0	---	---	---	25.0	24.5	24.5
MONTH	18.5	13.0	14.5	20.0	16.5	18.5	22.5	19.0	21.0	25.5	22.5	24.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	25.0	24.5	24.5	25.5	25.0	25.0	28.0	26.5	27.0	29.5	29.0	29.5
2	25.0	24.5	24.5	25.5	25.0	25.0	28.0	26.5	27.5	29.5	29.0	29.0
3	25.0	24.5	24.5	25.5	25.0	25.0	28.0	27.0	27.5	29.5	29.0	29.0
4	25.0	24.5	24.5	25.5	25.0	25.5	28.0	27.0	27.5	29.5	29.0	29.5
5	25.0	24.5	24.5	25.5	25.0	25.5	28.0	27.0	27.5	29.5	29.0	29.0
6	25.0	24.5	24.5	26.0	25.0	25.5	30.0	27.0	28.0	29.5	29.0	29.0
7	25.0	24.5	24.5	25.5	25.0	25.5	28.5	28.0	28.0	29.5	29.0	29.0
8	25.0	24.5	24.5	25.5	25.0	25.5	29.0	28.0	28.5	29.5	29.0	29.0
9	25.0	24.5	24.5	25.5	25.5	25.5	29.5	28.0	28.5	29.0	29.0	29.0
10	25.0	24.5	25.0	25.5	25.5	25.5	29.5	28.0	28.5	29.0	28.5	29.0
11	25.0	24.5	25.0	26.0	25.5	25.5	30.0	28.5	29.0	29.0	28.5	28.5
12	25.0	24.5	25.0	26.0	25.5	26.0	29.5	28.5	29.0	29.0	28.5	28.5
13	25.5	24.5	25.0	26.0	26.0	26.0	29.0	28.5	29.0	28.5	28.5	28.5
14	25.0	25.0	25.0	26.5	25.5	26.0	29.5	28.5	29.0	28.5	28.5	28.5
15	25.0	25.0	25.0	26.5	26.0	26.0	29.5	29.0	29.0	28.5	28.5	28.5
16	25.0	25.0	25.0	26.5	26.0	26.0	29.5	28.5	29.0	28.5	28.5	28.5
17	25.0	25.0	25.0	27.0	26.0	26.5	30.0	29.0	29.5	28.5	28.5	28.5
18	25.0	24.5	25.0	26.5	26.0	26.5	29.5	29.0	29.5	28.5	28.5	28.5
19	25.0	25.0	25.0	26.5	26.0	26.5	29.5	29.0	29.0	29.0	28.5	28.5
20	25.0	24.5	25.0	27.0	26.0	26.5	29.5	29.0	29.0	28.5	28.5	28.5
21	25.0	25.0	25.0	27.0	26.0	26.5	29.5	29.0	29.5	28.5	28.5	28.5
22	25.0	25.0	25.0	27.5	26.0	26.5	29.5	29.0	29.0	28.5	28.5	28.5
23	25.0	25.0	25.0	27.0	26.5	26.5	29.5	29.0	29.5	28.5	28.5	28.5
24	25.0	25.0	25.0	27.5	26.5	27.0	29.5	29.0	29.0	28.5	28.5	28.5
25	---	---	---	27.5	26.5	27.0	29.5	29.0	29.5	29.0	28.5	28.5
26	---	---	---	27.5	26.0	27.0	29.5	29.0	29.5	29.0	28.5	29.0
27	---	---	---	27.5	26.5	27.0	29.5	29.0	29.0	29.5	29.0	29.0
28	---	---	---	27.5	26.5	27.0	29.5	29.0	29.5	29.5	29.0	29.0
29	---	---	---	28.0	26.5	27.0	29.5	28.5	29.0	29.5	29.0	29.0
30	---	---	---	27.5	27.0	27.0	29.5	29.0	29.0	29.5	29.0	29.0
31	---	---	---	28.0	26.5	27.0	29.5	29.0	29.5	---	---	---
MONTH	25.5	24.5	25.0	28.0	25.0	26.0	30.0	26.5	29.0	29.5	28.5	29.0

08177500 COLETO CREEK NEAR VICTORIA, TX

LOCATION.--Lat 28°43'51", long 97°08'18", Victoria County, Hydrologic Unit 12100204, on left bank at downstream side of westbound bridge on U.S. Highway 59, 1.6 mi downstream from Coleto Creek dam, 9.0 mi southwest of Victoria, and 11.2 mi upstream from mouth.

DRAINAGE AREA.--514 mi^2.

PERIOD OF RECORD.--June 1939 to September 1954, June 1978 to current year.

REVISED RECORDS.--WSP 1562: 1939-40. WSP 1732: 1941.

GAGE.--Water-stage recorder. Datum of gage is 44.18 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 17, 1955, at datum 5.0 ft higher.

REMARKS.--Estimated daily discharges: Mar. 13-17. Records good except those below 4 ft^3/s, which are fair. Flow completely regulated since Feb. 21, 1980, by Coleto Creek Reservoir, 1.6 mi upstream. Diversions from Guadalupe River basin to Coleto Creek basin upstream from Coleto Creek Reservoir began Mar. 6, 1980 (see station 08176990). No other large diversion above station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--16 years (water years 1940-54, 1979) prior to regulation by Coleto Creek Reservoir, 92.7 ft^3/s (67,160 acre-ft/yr); 6 years (water years 1981-86) regulated, 92.5 ft^3/s (67,020 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 89,000 ft^3/s Oct. 16, 1946 (gage height, 36.64 ft, present datum, from floodmark) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1875, 236,000 ft^3/s Sept. 22, 1967 (gage height, 42.0 ft, from floodmark), present site and datum, on basis of slope-area measurement of peak flow. Flood of Apr. 20, 1976, reached a stage of 37.85 ft, at site 0.2 mi upstream at present datum. Flood of July 1, 1936, reached a stage of 32.2 ft, present site and datum, from information by railroad company.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,090 ft^3/s June 13 at 2200 hours (gage height, 8.17 ft); minimum daily, 1.7 ft^3/s Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	4.9	5.4	4.6	5.0	4.7	4.8	4.9	6.1	4.8	2.3	3.0
2	5.4	6.1	5.4	4.6	4.9	5.0	5.1	4.8	5.3	5.1	2.3	2.9
3	5.1	5.3	5.2	4.6	5.4	5.1	5.0	4.9	5.7	5.1	2.2	2.8
4	5.1	5.0	5.1	4.6	6.6	5.5	5.0	4.7	6.2	5.1	2.5	3.3
5	4.9	4.9	5.1	4.6	5.0	5.0	4.9	4.8	5.8	5.1	2.8	3.7
6	5.0	4.9	5.1	4.8	4.7	4.9	4.9	4.6	5.9	5.1	4.9	3.3
7	6.6	4.9	5.1	5.1	4.9	4.9	4.9	4.6	11	5.1	3.8	3.2
8	6.1	5.1	5.1	6.6	5.1	5.0	4.7	4.6	90	5.0	3.0	3.0
9	5.3	5.3	5.0	5.8	5.1	5.0	4.7	4.6	45	4.8	2.6	2.8
10	5.1	5.2	5.0	5.5	5.1	5.1	4.8	8.4	23	4.6	2.8	2.8
11	4.9	5.6	5.6	5.9	5.1	5.1	4.8	6.1	19	4.7	2.7	2.7
12	4.9	5.4	5.7	5.9	5.1	5.1	4.7	4.8	18	4.5	2.8	2.6
13	5.0	4.9	5.2	5.9	5.1	4.9	4.7	4.6	457	4.4	3.0	2.5
14	5.0	5.1	5.1	5.4	5.3	5.0	4.6	4.5	33	4.4	2.9	2.5
15	6.0	5.1	5.1	5.2	5.1	4.9	4.5	4.6	7.8	4.5	2.7	2.6
16	5.2	5.0	5.1	6.2	5.4	4.8	4.5	4.6	6.1	4.5	2.7	2.7
17	5.8	5.1	5.1	9.4	5.1	4.8	4.7	5.4	5.7	4.3	2.5	2.6
18	5.2	5.2	5.1	7.2	5.1	4.8	4.9	5.5	5.4	4.2	2.5	2.5
19	5.1	5.1	5.0	5.1	5.1	4.8	4.9	4.7	5.1	4.0	2.5	2.6
20	5.0	5.1	4.8	6.9	5.0	4.7	4.9	4.5	174	3.9	2.6	2.7
21	4.9	5.1	4.6	6.0	5.1	4.6	4.4	4.6	8.4	3.8	2.9	2.7
22	18	5.0	4.6	5.1	4.9	4.7	4.4	4.5	5.1	3.5	3.2	2.6
23	11	5.0	4.7	5.3	4.9	4.6	4.5	4.5	4.8	3.2	3.2	2.5
24	5.6	5.1	4.9	5.2	4.8	4.7	4.5	4.6	4.6	3.1	3.1	2.5
25	4.9	5.1	4.6	5.0	4.7	4.8	4.6	5.0	129	3.1	2.7	2.1
26	4.6	5.1	4.8	4.9	4.8	4.6	4.7	6.4	16	3.1	2.6	1.8
27	4.4	5.6	4.8	4.9	4.9	4.6	4.8	15	6.1	2.9	2.5	1.7
28	4.4	5.4	4.9	5.1	4.9	4.6	4.8	7.8	5.4	2.7	2.6	2.0
29	4.5	5.4	4.9	5.1	---	4.6	4.9	5.5	5.1	2.6	2.5	2.1
30	4.6	5.4	4.7	5.1	---	4.7	5.3	5.7	4.9	2.5	2.6	1.9
31	4.6	---	4.6	5.1	---	4.8	---	7.5	---	2.3	2.9	---
TOTAL	178.4	155.4	155.4	170.7	142.2	150.4	142.9	171.3	1124.5	126.0	86.9	78.7
MEAN	5.75	5.18	5.01	5.51	5.08	4.85	4.76	5.53	37.5	4.06	2.80	2.62
MAX	18	6.1	5.7	9.4	6.6	5.5	5.3	15	457	5.1	4.9	3.7
MIN	4.4	4.9	4.6	4.6	4.7	4.6	4.4	4.5	4.6	2.3	2.2	1.7
AC-FT	354	308	308	339	282	298	283	340	2230	250	172	156

CAL YR 1985 TOTAL 26707.1 MEAN 73.2 MAX 3700 MIN 4.0 AC-FT 52970
WTR YR 1986 TOTAL 2682.8 MEAN 7.35 MAX 457 MIN 1.7 AC-FT 5320

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°29'56", long 98°30'36", Bexar County, Hydrologic Unit 12100301, on right bank 30 ft downstream from low-water bridge on Dresden Drive at San Antonio, 0.15 mi west of intersection of Blanco Road and Dresden Drive, and 4.0 mi upstream from Olmos Dam.

DRAINAGE AREA.--21.2 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1968 to September 1981 (operated as a continuous-record station), October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 726.10 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Recording rain gage at station, with three additional recording rain gages in the watershed. Rain gage and gage-height telemeters at station.

AVERAGE DISCHARGE.--13 years (water years 1968-81), 4.34 ft^3/s (2.78 in/yr), 3,140 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft^3/s June 4, 1986 (gage height, 9.85 ft); maximum gage height, 14.82 ft (from floodmark) Sept. 13, 1978; no flow at times.
Maximum stage since 1935, that of Sept. 13, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in September and November 1947 reached a stage of 8.5 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s (revised) and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 15	0250	882	4.97	May 26	1130	1,220	5.41
Oct. 19	1625	1,150	5.33	May 31	0735	1,090	5.26
Nov. 24	0725	864	4.94	June 2	1900	2,370	6.49
Nov. 25	0400	870	4.95	June 4	0420	*8,000	*9.85
May 9	2310	973	5.11	June 12	1640	753	4.77
May 25	0840	1,170	5.36	June 18	0855	4,010	7.72

Minimum discharge, no flow most of time.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: November 1968 to current year. Sediment analyses: October 1972 to September 1973. Water temperatures: November 1968 to current year. Bacteria analyses: April 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT											
21...	1112	155	203	8.40	16.5	70	300	9.0	94	5.1	K21000
MAY											
26...	1215	858	92	8.60	20.0	100	330	8.7	99	4.3	--
27...	1035	625	140	--	--	80	210	--	--	4.1	--
JUN											
04...	0846	1500	154	8.00	20.0	80	190	8.4	95	2.9	23000

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT											
21...	39000	81	14	29	2.0	8.0	0.4	3.0	67	18	6.8
MAY											
26...	--	46	3	17	0.9	2.6	0.2	3.5	43	7.9	2.1
27...	--	54	8	20	1.0	2.4	0.1	3.0	46	11	2.2
JUN											
04...	46000	68	9	25	1.3	2.6	0.1	3.5	59	12	3.1

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)
OCT											
21...	0.2	6.5	110	598	186	0.37	0.03	0.40	0.07	1.5	1.6
MAY											
26...	0.1	5.8	66	748	89	0.45	0.05	0.50	0.10	1.0	1.1
27...	<0.1	6.3	73	517	72	0.34	0.06	0.40	0.12	0.78	0.9
JUN											
04...	<0.1	8.7	92	793	80	0.58	0.02	0.60	0.06	0.84	0.9

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX--Continued
(Flood-hydrograph partial-record station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT											
21...	0.82	13	--	--	--	--	--	--	--	--	--
MAY											
26...	0.39	16	2	21	<1	<10	4	56	<5	3	<0.1
27...	0.56	12	--	--	--	--	--	--	--	--	--
JUN											
04...	0.62	19	2	33	<1	<10	2	43	<5	2	<0.1

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
OCT											
21...	--	--	--	--	--	--	--	--	--	--	--
MAY											
26...	<1	<1	8	<0.1	<0.1	<0.01	0.1	<0.01	<0.01	<0.01	0.35
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	<1	<1	3	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.26

DATE	DI-ELDRIN TOTAL (UG/L)	DI-SYSTON TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
OCT											
21...	--	--	--	--	--	--	--	--	--	--	--
MAY											
26...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.02	<0.01	<0.01
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
OCT										
21...	--	--	--	--	--	--	--	--	--	--
MAY										
26...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
27...	--	--	--	--	--	--	--	--	--	--
JUN										
04...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01

08177800 OLMOS RESERVOIR AT SAN ANTONIO, TX

LOCATION.--Lat 29°28'24", long 98°28'26", Bexar County, Hydrologic Unit 12100301, in gate house near middle of dam on Olmos Drive, 0.8 mi upstream from Hildebrand Street, 1.5 mi upstream from Brackenridge Park Zoo, and 4.0 mi downstream from gaging station 08177700.

DRAINAGE AREA.--32.4 mi².

PERIOD OF RECORD.--June 1968 to September 1971, April 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Dam is a concrete gravity-type structure with a maximum height of 50 ft, a total length of 1,941 ft, and a spillway crest length of 1,051 ft. The dam, spillway section, and gate house, were rebuilt in 1980. The outlet structure consists of six vertical slide-gate-controlled concrete conduits with entrance dimensions of 5.75 ft wide by 7.83 ft high. Gates are maintained and operated by city of San Antonio Fire Department as required to control downstream flooding. Reservoir is empty except during flooding when it is used as a detention reservoir. Reservoir has a surface area of about 950 acres at top of dam. Dam is owned by city of San Antonio. Rain gage and gage-height telemeter at station. Prior to 1983 water year, elevation published at 2400 hours. Data regarding dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Design flood (probably maximum flood)...............................	736.4	24,150
Floor of gate operating room..	736.0	23,560
Top of dam (crest of spillway)......................................	728.0	14,240
Lowest gated outlet (invert)..	680.0	0

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 708.65 ft June 4, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 708.65 ft June 4.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	682.47	687.56	683.22	683.59	682.33	683.37	681.79	682.13	693.77	683.18	681.68	687.41
2	684.17	690.67	683.09	683.63	682.35	683.38	681.79	681.68	694.39	683.69	681.68	683.79
3	684.43	683.20	683.13	683.62	694.04	683.36	681.86	681.68	694.29	683.70	681.68	682.32
4	682.89	682.54	683.17	683.64	690.98	683.38	682.89	681.68	708.65	681.68	681.68	683.38
5	682.20	682.31	683.21	683.63	683.24	683.43	681.88	681.68	701.97	681.68	681.68	684.16
6	682.28	682.24	683.19	683.79	683.25	683.43	682.22	681.68	686.30	681.68	681.68	684.32
7	682.34	682.22	683.22	683.74	683.25	683.43	682.01	681.68	691.60	681.68	681.68	690.44
8	682.38	682.27	683.25	685.75	683.11	683.37	681.81	682.24	688.43	681.68	681.68	684.33
9	682.61	682.52	683.27	684.36	683.13	683.48	681.88	682.00	687.76	681.68	681.68	684.19
10	682.38	682.36	683.60	683.70	683.10	683.42	681.89	690.34	683.73	681.68	681.68	682.86
11	682.72	682.66	683.55	683.31	683.11	685.21	681.96	682.12	684.59	681.68	682.14	684.52
12	682.64	684.10	683.35	683.29	683.13	685.20	681.92	681.94	691.71	681.68	682.16	684.50
13	682.45	682.60	683.31	683.30	683.24	683.06	681.88	682.12	691.71	681.68	682.15	682.52
14	682.56	682.33	683.31	683.37	683.26	683.03	681.88	686.89	690.21	681.68	682.16	682.28
15	692.83	684.74	683.31	683.42	683.15	684.18	681.89	688.36	687.57	681.68	682.15	682.21
16	683.29	682.75	683.33	688.36	683.20	683.20	681.84	682.66	683.96	681.68	682.15	682.00
17	682.67	682.41	683.34	688.44	683.21	683.11	681.68	684.99	687.99	681.68	682.14	681.98
18	682.49	682.41	683.35	683.59	683.23	683.98	681.85	684.24	706.13	681.68	682.14	681.98
19	694.62	683.71	683.36	682.69	683.27	683.32	681.87	682.38	704.28	683.68	682.14	681.96
20	693.24	682.96	683.37	682.82	683.25	681.68	681.68	682.43	695.86	681.68	682.09	681.96
21	688.65	683.06	683.40	683.00	683.28	681.68	681.68	682.55	691.37	681.68	682.13	681.96
22	684.31	682.60	683.46	683.07	683.51	681.68	681.68	682.59	688.09	681.68	682.11	681.96
23	682.50	682.82	683.42	683.08	683.44	681.68	681.68	682.68	681.70	681.68	682.13	681.95
24	682.36	691.44	683.43	682.30	683.28	681.68	681.68	682.71	685.85	681.68	682.15	681.95
25	682.28	691.95	683.45	682.37	683.34	681.68	681.68	691.74	685.76	681.68	682.10	681.95
26	682.30	684.13	683.46	682.24	683.34	681.68	681.68	692.36	681.73	681.68	682.11	681.95
27	682.25	690.48	683.49	682.18	683.36	681.68	681.68	692.33	681.75	681.68	682.12	682.00
28	682.25	685.56	683.50	682.23	683.39	681.74	681.68	686.95	682.43	681.68	682.15	682.59
29	682.26	683.29	683.49	682.23	---	681.77	681.68	682.24	682.42	681.68	682.11	682.60
30	682.34	683.22	683.51	682.24	---	681.78	682.69	690.42	683.07	681.68	682.13	682.20
31	682.34	---	683.57	682.31	---	681.79	---	696.57	---	681.68	687.24	---
MEAN	683.92	684.24	683.36	683.53	683.85	682.87	681.88	684.78	689.97	681.92	682.15	683.14
MAX	694.62	691.95	683.60	688.44	694.04	685.21	682.89	696.57	708.65	683.70	687.24	690.44
MIN	682.20	682.22	683.09	682.18	682.33	681.68	681.68	681.68	681.70	681.68	681.68	681.95

CAL YR 1985 MEAN 683.01 MAX 698.91 MIN 681.68
WTR YR 1986 MEAN 683.79 MAX 708.65 MIN 681.68

08178000 SAN ANTONIO RIVER AT SAN ANTONIO, TX

LOCATION.--Lat 29°24'34", long 98°29'41", Bexar County, Hydrologic Unit 12100301, on left bank 193 ft downstream from South Alamo Street Bridge in San Antonio, 2.1 mi upstream from San Pedro Creek, and 230.6 mi upstream from mouth.

DRAINAGE AREA.--41.8 mi². Flow of river comes from intermittent spring flow and from artesian wells; drainage area of streams not applicable.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1895 to June 1906 (periodic discharge measurements only), January 1915 to November 1929, February 1939 to current year. Ground-water discharge into river is discussed by Petit and George, Texas Board of Water Engineers Bull. 5608, vol. 1 (1956, p. 45).

REVISED RECORDS.--WSP 1312: 1917. WSP 1923: Drainage area. WDR TX-72-1: 1971(m).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 605.26 ft above National Geodetic Vertical Datum of 1929. Jan. 26, 1915, to Feb. 27, 1916, nonrecording gage at site 1.3 mi upstream at different datum. Feb. 28, 1916, to Apr. 7, 1920, nonrecording gage at site 1.1 mi upstream at different datum. Apr. 8, 1920, to Nov. 16, 1929, and Feb. 15, 1939, to Apr. 25, 1967, water-stage recorder in vicinity of South Alamo Street Bridge at 7.00-foot higher datum. Apr. 25, 1967, to May 13, 1969, water-stage recorder at site 307 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Floodflow is regulated by Olmos flood-control reservoir (capacity, 14,240 acre-ft), about 8.5 mi upstream. Olmos Dam was completed in 1926 and rebuilt in 1980. Springs emerge intermittently from the Edwards and associated limestones along the Balcones Fault Zone upstream from station. Rain gage and gage-height telemeters at station.

AVERAGE DISCHARGE.--61 years, 54.1 ft³/s (17.58 in/yr), 39,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,300 ft³/s Sept. 10, 1921 (gage height, 20.14 ft, from floodmark), at former site and datum, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement of peak flow; no flow at times due to regulation.
Maximum stage since 1819, that of Sept. 10, 1921.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 5, 1819, equaled or exceeded that of Sept. 10, 1921.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,570 ft³/s June 4 at 0540 hours (gage height, 14.38 ft); minimum daily, 0.53 ft³/s Mar. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	86	30	34	23	20	15	18	189	33	13	84
2	10	174	29	39	21	19	15	19	51	34	12	13
3	31	14	12	21	331	21	17	16	230	32	11	14
4	20	21	29	20	125	16	26	14	2260	29	23	13
5	15	20	30	20	30	3.3	20	16	972	27	14	124
6	15	20	30	19	27	4.8	18	8.7	58	25	14	47
7	16	19	30	20	27	6.0	19	1.4	130	25	11	320
8	16	20	30	55	26	15	29	20	81	21	12	11
9	16	19	31	41	26	14	17	33	63	19	11	5.3
10	16	19	43	22	26	14	17	85	43	20	11	2.5
11	15	19	16	20	22	47	5.9	18	58	15	11	.96
12	16	23	27	17	13	5.5	7.1	8.2	47	15	12	8.5
13	15	20	27	3.8	16	11	15	15	64	17	11	5.7
14	8.2	19	26	20	16	17	14	55	64	17	7.1	5.1
15	329	33	26	13	25	45	28	87	56	29	.84	5.7
16	11	20	26	12	25	17	15	13	40	18	21	6.9
17	2.3	19	27	53	25	11	12	13	150	15	8.0	6.6
18	15	19	26	25	23	7.0	6.4	27	529	15	8.6	7.0
19	392	29	22	23	36	18	7.5	18	711	14	9.2	6.8
20	197	20	22	24	24	22	14	18	232	13	11	43
21	118	11	22	21	21	.53	16	17	88	13	13	10
22	19	4.8	23	20	22	11	13	17	72	12	13	8.3
23	10	15	24	22	22	12	14	17	54	13	12	3.5
24	32	172	23	22	14	11	14	16	62	13	13	1.8
25	20	180	21	22	7.4	15	16	147	58	13	11	6.5
26	19	29	23	21	17	15	7.7	181	53	13	11	6.7
27	18	203	19	21	45	15	13	225	51	12	11	6.8
28	6.5	37	22	21	21	16	14	39	35	13	17	32
29	11	29	23	22	---	15	14	13	45	12	13	5.2
30	15	30	23	22	---	13	60	114	31	12	12	.67
31	18	---	24	40	---	15	---	459	---	12	41	---
TOTAL	1449.7	1343.8	786	755.8	1056.4	472.13	499.6	1748.3	6577	571	398.74	811.53
MEAN	46.8	44.8	25.4	24.4	37.7	15.2	16.7	56.4	219	18.4	12.9	27.1
MAX	392	203	43	55	331	47	60	459	2260	34	41	320
MIN	2.3	4.8	12	3.8	7.4	.53	5.9	1.4	31	12	.84	.67
CFSM	1.12	1.07	.61	.58	.90	.36	.40	1.35	5.24	.44	.31	.65
IN.	1.29	1.20	.70	.67	.94	.42	.44	1.56	5.85	.51	.35	.72
AC-FT	2880	2670	1560	1500	2100	936	991	3470	13050	1130	791	1610

CAL YR 1985 TOTAL 14318.77 MEAN 39.2 MAX 768 MIN .43 CFSM .94 IN. 12.74 AC-FT 28400
WTR YR 1986 TOTAL 16470.00 MEAN 45.1 MAX 2260 MIN .53 CFSM 1.08 IN. 14.66 AC-FT 32670

08178000 SAN ANTONIO RIVER AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: June 1965 to current year. Sediment analyses: October 1968 to September 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
MAY 27...	1150	282	179	8.70	22.5	45	180	7.9	92	7.9	K28000
JUN 04...	1735	2110	135	8.20	21.5	120	240	8.9	104	2.7	--
05...	1240	1040	192	7.20	25.0	50	190	8.3	102	2.3	K30000
18...	1025	1600	113	8.20	23.5	60	350	8.7	105	5.1	32000

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
MAY 27...	K38000	77	10	26	3.0	4.3	0.2	3.7	67	14	5.4
JUN 04...	--	51	5	18	1.5	2.7	0.2	4.0	46	11	3.1
05...	20000	82	0	29	2.3	4.1	0.2	4.0	--	17	5.3
18...	200000	50	6	17	1.9	2.6	0.2	3.8	44	8.9	2.8

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)
MAY 27...	0.1	6.4	100	266	69	0.65	0.05	0.70	0.09	1.2	1.3
JUN 04...	<0.1	6.1	74	661	77	0.45	0.05	0.50	0.14	1.1	1.2
05...	0.1	8.9	--	282	40	0.83	0.07	0.90	0.18	0.82	1.0
18...	0.1	6.5	70	367	53	0.46	0.04	0.50	0.12	1.4	1.5

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)
MAY 27...	0.51	14	2	33	<1	<10	4	23	<5	4	<0.1
JUN 04...	0.64	15	2	19	<1	<10	3	37	<5	<1	<0.1
05...	0.52	9.3	--	--	--	--	--	--	--	--	--
18...	0.66	13	--	--	--	--	--	--	--	--	--

DATE	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
MAY 27...	<1	<1	12	0.1	<0.1	<0.01	<0.1	0.02	0.01	<0.01	0.27
JUN 04...	<1	<1	5	<0.1	<0.1	<0.01	0.1	<0.01	0.01	<0.01	0.21
05...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

DATE	DIELDRIN TOTAL (UG/L)	DISYSTON TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
MAY 27...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.01
JUN 04...	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.02	<0.01	<0.01
05...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

08178000 SAN ANTONIO RIVER AT SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
MAY										
27...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	0.04	<0.01	<0.01
JUN										
04...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	0.02	<0.01	<0.01
05...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

08178622 LORENCE CREEK AT SHADOW CLIFF DRIVE, SAN ANTONIO, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°34'58", long 98°27'36", Bexar County, Hydrologic Unit 123100301, at downstream side of culvert on Shadow Cliff Drive, 0.8 mi downstream from Thousand Oaks Boulevard, 1.6 mi downstream from San Pedro Avenue, and 3.4 mi upstream from mouth.

DRAINAGE AREA.--4.57 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1980 to current year. Records for January 1980 to September 1985, at site 0.8 mi upstream published as "at Thousand Oaks Boulevard" (station 08178620), are not equivalent because of difference in drainage area.

GAGE.--Digital recorders (stage and rainfall). Gage is not referenced to National Geodetic Vertical Datum of 1929. (Gage removed Sept. 5, 1984, to Sept. 30, 1985.) Prior to Oct. 1, 1985, at site 0.8 mi upstream.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 5.90 ft May 6, 1982 (discharge not determined), at site and datum then in use; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 21	Unknown	*150	*4.36	No other peak greater than base discharge.			

Minimum, no flow most of time.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT											
21...	1245	E15	138	7.90	20.0	150	170	7.6	86	3.0	6500
MAY											
26...	1245	13	113	7.20	21.5	200	180	5.8	67	5.9	--
27...	0921	49	145	7.50	21.0	80	210	6.6	76	6.1	--
27...	1018	49	129	7.30	21.0	100	230	7.0	81	4.1	--

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT											
21...	K99000	60	6	22	1.2	1.7	0.1	3.2	54	12	2.0
MAY											
26...	--	50	7	18	1.2	2.5	0.2	3.9	43	13	2.1
27...	--	65	13	24	1.3	2.0	0.1	3.5	52	13	2.3
27...	--	57	11	21	1.0	1.7	0.1	3.3	46	15	2.0

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
OCT											
21...	<0.1	5.3	80	224	52	0.54	0.06	0.60	0.13	0.87	1.0
MAY											
26...	<0.1	5.8	72	275	--	0.42	0.08	0.50	0.17	0.73	0.9
27...	<0.1	6.1	83	297	--	0.63	0.07	0.70	0.16	0.74	0.9
27...	<0.1	7.2	79	348	--	0.59	0.11	0.70	0.20	1.0	1.2

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON. DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT											
21...	0.14	14	<1	21	<1	<10	1	46	1	4	<0.1
MAY											
26...	0.23	13	1	24	<1	<10	6	96	<5	6	<0.1
27...	0.14	14	1	18	<1	<10	1	31	<5	4	<0.1
27...	0.24	16	<1	22	<1	<10	2	150	<5	6	<0.1

08178622 LORENCE CREEK AT SHADOW CLIFF DRIVE, SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
OCT											
21...	<1	<1	8	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.15
MAY											
26...	<1	<1	17	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.65
27...	<1	<1	12	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.38
27...	<1	<1	12	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.21

DATE	DIELDRIN TOTAL (UG/L)	DISYSTON TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
OCT											
21...	<0.01	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
MAY											
26...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
27...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
27...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
OCT										
21...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	0.01	<0.01	<0.01
MAY										
26...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
27...	--	--	<0.01	<0.1		<1	<0.01	--		
27...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01

08178640 WEST ELM CREEK AT SAN ANTONIO, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°37'23", long 98°26'29", Bexar County, Hydrologic Unit 12100301, at mid-channel, 1.8 mi upstream from mouth of East Elm Creek, 2.1 mi upstream from Farm Road 1604, and 7.0 mi north of San Antonio International Airport.

DRAINAGE AREA.--2.45 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1976 to current year.

GAGE.--Digital recorders (stage and rainfall) and crest-stage gages. Gage is not referenced to National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,000 ft³/s Nov. 1, 1977 (gage height, 5.82 ft); maximum gage height, 6.88 ft May 6, 1982; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	1245	134	4.00	Feb. 3	1410	134	4.00
Nov. 24	0400	153	4.13	June 4	0540	129	3.96
25	0120	*169	*4.23	Sept. 5	2110	156	4.15

Minimum, no flow most of time.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: May 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
MAY											
26-26	0800	<1.0	155	--	--	200	300	--	--	1.3	--
26...	1000	1.0	150	--	--	100	290	--	--	1.6	--
26...	1146	E0.1	68	7.20	22.0	30	15	7.5	88	4.3	--
27...	1005	E10	112	8.00	20.0	250	130	7.4	83	3.5	--
JUN											
04...	1130	31	182	7.80	22.5	--	--	7.5	89	1.6	K3000

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
MAY											
26-26	--	64	8	24	0.9	2.2	0.1	4.9	56	11	3.2
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	30	0	11	0.6	1.5	0.1	2.8	31	5.4	1.9
27...	--	49	6	18	0.9	1.9	0.1	4.0	43	8.6	2.1
JUN											
04...	K16000	85	1	32	1.3	1.8	0.1	3.7	84	8.4	1.9

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
MAY											
26-26	0.1	5.3	85	518	2.73	0.07	2.80	0.95	1.1	2.1	0.26
26...	--	--	--	644	1.72	0.08	1.80	0.14	1.7	1.8	0.35
26...	<0.1	2.7	45	12	0.19	0.01	0.20	0.10	0.5	0.6	0.11
27...	<0.1	5.5	67	94	0.83	0.07	0.90	0.12	1.1	1.2	0.18
JUN											
04...	<0.1	10	110	--	--	--	--	--	--	--	--

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)
MAY											
26-26	20	1	21	<1	<10	5	30	<5	<1	<0.1	<1
26...	24	--	--	--	--	--	--	--	--	--	--
26...	5.9	<1	14	<1	<10	1	19	<5	2	<0.1	<1
27...	11	1	17	<1	<10	2	33	<5	4	<0.1	<1
JUN											
04...	--	<1	21	<1	<10	<1	46	<5	2	<0.1	<1

08178640 WEST ELM CREEK AT SAN ANTONIO, TX--Continued
(Flood-hydrograph partial-record station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)
MAY											
26-26	<1	82	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.07	<0.01
26...	--	--	--	--	--	--	--	--	--	--	--
26...	<1	6	--	--	--	--	--	--	--	--	--
27...	<1	<3	--	--	--	--	--	--	--	--	--
JUN											
04...	<1	7	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.16	<0.01

DATE	DI-SYSTON TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
MAY										
26-26	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
JUN										
04...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
MAY										
26-26	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
JUN										
04...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01

08178645 EAST ELM CREEK AT SAN ANTONIO, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°37'04", long 98°25'41", Bexar County, Hydrologic Unit 12100301, at mid-channel, 2.1 mi upstream from West Elm Creek, 2.4 mi upstream from Farm Road 1604, and 6.9 mi north of San Antonio International Airport.

DRAINAGE AREA.--2.33 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1975 to current year.

GAGE.--Digital recorders (stage and rainfall) and crest-stage gages. Gage is not referenced to National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480 ft^3/s May 6, 1982 (gage height, 7.96 ft); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 4	1125	*30	*4.15				

Minimum, no flow most of time.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: May 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
JUN											
04...	0600	10	80	--	--	--	--	--	--	4.6	K12000
04...	0700	19	87	--	--	--	--	--	--	3.9	K11000
04...	0930	19	110	8.40	22.0	120	20	7.7	91	3.3	K15000
04...	1435	8.4	154	7.60	26.0	--	--	7.4	95	1.8	--

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
JUN											
04...	38000	--	--	--	--	--	--	--	--	--	--
04...	44000	37	1	13	1.0	0.7	0	5.9	36	7.8	1.5
04...	K19000	49	1	18	1.0	0.8	0	5.6	48	8.1	1.5
04...	--	70	1	26	1.3	1.0	0	5.0	69	9.5	1.5

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<0.1	18	69	--	--	--	--	--	--	--	--
04...	<0.1	19	83	24	13	0.38	0.02	0.40	0.09	0.91	1.0
04...	<0.1	18	100	--	--	--	--	--	--	--	--

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)
JUN											
04...	--	--	<1	15	<1	<10	5	110	<5	3	<0.1
04...	--	--	--	--	--	--	--	--	--	--	--
04...	0.06	15	<1	15	<1	<10	2	61	<5	1	<0.1
04...	--	--	--	--	--	--	--	--	--	--	--

08178645 EAST ELM CREEK AT SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JUN											
04...	<1	<1	21	--	--	--	--	--	--	--	--
04...	--	--	--	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01
04...	<1	<1	40	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01
04...	--	--	--	--	--	--	--	--	--	--	--

DATE	DIELDRIN TOTAL (UG/L)	DISYSTON TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
04...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
04...	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
JUN										
04...	--	--	--	--	--	--	--	--	--	--
04...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
04...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
04...	--	--	--	--	--	--	--	--	--	--

08178650 ELM CREEK RESERVOIR SITE 11 AT SAN ANTONIO, TX

LOCATION.--Lat 29°36'11", long 98°25'50", Bexar County, Hydrologic Unit 12100301, located on left bank on upstream side of dam, 2.4 mi east of U.S. Highway 281, 0.7 mi upstream from highway 1604, and 8.0 mi upstream from mouth.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: March 1983 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
JUN 04...	1530	162	24.0	65	28	7.5	1.9	77	6	29	1.2	1.6

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)
JUN 04...	0.1	3.9	71	10	2.4	<0.1	11	100	42	13	0.28	0.02

DATE	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JUN 04...	0.30	0.03	0.77	0.8	0.11	13	1	19	<1	<10	<1	23

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TI (UG/L)
JUN 04...	<5	2	<0.1	<1	<1	6	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01

DATE	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-SYSTON TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JUN 04...	<0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
JUN 04...	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX

LOCATION.-Lat 29°30'57", long 98°25'51", Bexar County, Hydrologic Unit 12100301, on right bank at downstream side of eastbound bridge on Interstate Highway 410 in San Antonio, 1.0 mi west of Northeast School, 1.1 mi upstream from Perrin-Beitel Creek, and 2.7 mi east of San Antonio International Airport.

DRAINAGE AREA.--137 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1960 to current year.
Water-quality records.--Chemical, biochemical, and pesticide analyses: November 1968 to September 1985. Sediment analyses: November 1971 to September 1973. Water temperatures: November 1968 to September 1985. Bacteria analyses May 1976 to September 1985.

GAGE.--Water-stage recorder with concrete control. Datum of gage is 684.60 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 25 to Dec. 5, Apr. 9-30, May 5-9, 11-16, July 11, 12, July 24 to and Sept. 4 Records good except those for estimated daily discharges, which are fair. Some diversions upstream from gage for irrigation. Flow is affected at times by discharge from the flood-detention pools of eleven floodwater-retarding structures with a combined detention capacity of 26,770 acre-ft. These structures control runoff from 74.6 mi above this station. Recording rain gage at station with four additional recording rain gages located in the watershed.

AVERAGE DISCHARGE.--26 years, 9.56 ft^3/s (6,930 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,900 ft^3/s May 12, 1972 (gage height, 15.22 ft), from rating curve extended above 8,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1853, 23 to 24 ft in October 1913. Flood in September 1921 reached a stage of 18 ft, and flood of Sept. 27, 1946, reached a stage of 18.2 ft, and are the second and third highest since 1899.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,660 ft^3/s June 4 at 0800 hours (gage height, 10.66 ft); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	7.2	7.8	2.3	2.8	2.9	.83	5.5	35	9.2	.00	.00
2	7.5	51	7.6	2.3	2.0	2.8	1.4	1.1	9.9	8.7	.00	.00
3	4.5	14	7.4	2.3	165	2.0	.75	1.2	29	8.6	.00	.00
4	.23	8.9	7.2	2.2	36	2.0	1.2	1.1	1890	8.6	.00	.00
5	.08	6.1	7.0	2.0	3.9	2.0	.88	1.0	70	8.5	.00	1.0
6	.04	2.1	6.8	2.0	2.0	2.0	.78	.90	36	8.1	.00	3.9
7	.03	2.8	3.3	2.4	1.4	2.0	.80	.80	60	8.1	.00	14
8	.02	3.0	2.9	9.0	1.2	2.0	.77	.70	28	8.1	.00	.97
9	.02	2.9	4.3	5.4	.81	2.0	.80	.70	22	6.8	.00	.98
10	.00	2.9	7.6	2.9	1.9	2.2	.75	1.3	21	.73	.00	4.5
11	.00	2.6	8.1	2.4	3.3	2.1	.70	3.5	19	.60	.00	4.0
12	1.2	4.2	5.7	2.3	2.4	2.7	.65	2.0	25	.40	.00	1.6
13	1.5	7.0	2.9	2.3	3.3	2.1	.60	1.0	33	.70	.00	.52
14	1.7	2.3	2.9	2.1	2.9	2.0	.55	10	21	2.4	.00	.51
15	48	2.0	2.9	2.0	2.2	2.1	.50	7.0	18	2.3	.00	.51
16	10	1.8	2.9	2.1	2.0	1.5	.45	5.0	17	2.6	.00	.51
17	3.6	1.8	2.9	4.5	2.9	1.3	.40	1.3	31	4.6	.00	.51
18	2.5	1.8	2.8	2.4	1.6	2.2	.35	1.6	1160	6.5	.00	.51
19	126	1.8	2.9	2.3	.85	1.7	.30	.93	73	4.8	.00	.51
20	92	1.5	2.9	2.2	3.9	1.9	.25	.93	24	4.3	.00	.66
21	31	1.5	2.9	2.0	4.3	1.8	.20	.83	16	3.8	.00	.71
22	20	1.6	2.9	2.0	5.3	2.3	.15	.77	13	.82	.00	.63
23	9.9	2.4	3.2	1.9	4.0	2.5	.10	.77	13	.63	.00	1.2
24	7.3	153	3.1	1.8	4.1	2.5	.05	.71	15	.40	.00	2.6
25	2.9	10	2.8	1.8	3.9	2.5	.00	3.3	13	.20	.00	2.6
26	2.6	50	2.6	1.8	3.6	2.9	.00	23	11	.10	.00	2.5
27	2.5	15	2.6	1.8	3.7	2.5	.03	64	11	.08	.00	.65
28	2.3	10	2.7	1.8	2.2	2.0	.10	16	10	.04	.00	1.6
29	1.8	9.0	2.6	1.8	---	.90	.40	5.8	9.6	.02	.00	1.6
30	.21	8.0	2.7	1.5	---	.81	.62	21	9.2	.01	.00	2.1
31	1.6	---	3.1	1.5	---	.78	---	226	---	.00	.00	---
TOTAL	388.53	388.2	130.0	77.1	273.46	62.99	15.36	409.74	3742.7	110.73	.00	51.38
MEAN	12.5	12.9	4.19	2.49	9.77	2.03	.51	13.2	125	3.57	.00	1.71
MAX	126	153	8.1	9.0	165	2.9	1.4	226	1890	9.2	.00	14
MIN	.00	1.5	2.6	1.5	.81	.78	.00	.70	9.2	.00	.00	.00
AC-FT	771	770	258	153	542	125	30	813	7420	220	.00	102

CAL YR 1985 TOTAL 6355.40 MEAN 17.4 MAX 1360 MIN .00 AC-FT 12610
WTR YR 1986 TOTAL 5650.19 MEAN 15.5 MAX 1890 MIN .00 AC-FT 11210

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: November 1968 to current year. Sediment analyses: October 1968 to September 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 21...	1114	22	405	7.50	32.0	25	--	7.3	--	1.8	K1900
MAY 26...	1328	50	937	7.60	24.0	25	32	3.3	40	4.9	4600
27...	1035	150	166	7.60	20.5	200	210	8.4	96	5.7	--
JUN 04...	0938	5400	140	7.70	20.5	80	700	7.6	87	3.8	--
18...	1227	2400	148	8.00	23.0	100	230	6.3	75	5.9	52000

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 21...	8300	170	41	60	4.0	12	0.4	13	125	56	11
MAY 26...	--	380	260	120	19	41	1	23	118	290	49
27...	--	--	--	--	--	--	--	--	56	--	--
JUN 04...	--	57	2	21	1.1	2.8	0.2	4.2	55	9.2	3.1
18...	76000	59	5	22	1.0	2.7	0.2	4.7	54	10	3.4

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
OCT 21...	0.4	12	240	237	78	0.47	0.03	0.50	0.11	0.39	0.5
MAY 26...	0.6	8.0	620	48	--	0.75	0.05	0.80	0.11	0.89	1.0
27...	--	--	--	487	--	0.35	0.05	0.40	0.12	0.98	1.1
JUN 04...	0.1	7.9	82	1050	138	0.28	0.02	0.30	0.08	1.4	1.5
18...	0.1	7.9	84	300	52	0.33	0.07	0.40	0.08	0.42	0.5

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT 21...	0.14	5.8	--	--	--	--	--	--	--	--	--
MAY 26...	0.11	11	2	110	<1	<10	4	10	<5	21	<0.1
27...	0.52	14	--	--	--	--	--	--	--	--	--
JUN 04...	0.86	38	3	23	<1	<10	1	67	<5	2	<0.1
18...	0.38	17	--	--	--	--	--	--	--	--	--

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
OCT 21...	--	--	--	--	--	--	--	--	--	--	--
MAY 26...	1	<1	8	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.1
27...	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	<1	<1	4	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.27
18...	--	--	--	--	--	--	--	--	--	--	--

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	DI-ELDRIN TOTAL (UG/L)	DI-SYSTON TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
OCT											
21...	--	--	--	--	--	--	--	--	--	--	--
MAY											
26...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01
18...	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
OCT										
21...	--	--	--	--	--	--	--	--	--	--
MAY										
26...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
27...	--	--	--	--	--	--	--	--	--	--
JUN										
04...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	0.03	<0.01	<0.01
18...	--	--	--	--	--	--	--	--	--	--

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX

LOCATION.--Lat 29°21'25", long 98°24'45", Bexar County, Hydrologic Unit 12100301, on right bank at upstream side of bridge on Loop 13 at San Antonio, 1.4 mi east of Brooks Air Force Base, and 3.3 mi upstream from Rosillo Creek.

DRAINAGE AREA.--189 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 526.95 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 22 to Nov. 7, June 18 to July 1, July 3-6, and Sept. 6-30. Records good. Small diversions above station. Recording rain gages located in watershed above station. Most of low flow comes from artesian wells and springs in the city of San Antonio. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08178700. Satellite telemeter at station.

AVERAGE DISCHARGE.--26 years, 41.9 ft^3/s (3.01 in/yr), 30,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 ft^3/s Sept. 27, 1973 (gage height, 28.83 ft); no flow Aug. 13, 1967.
Maximum stage since at least 1941, that of Sept. 27, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Sept. 27, 1946, and Aug. 15, 1960, were about equal magnitude. Flood of Aug. 15, 1960, reached a stage of 26.8 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,600 ft^3/s June 4 at 1600 hours (gage height, 27.95 ft, from floodmark); minimum daily, 9.6 ft^3/s Apr. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	45	29	17	20	19	14	33	407	28	14	14
2	17	200	25	17	19	19	14	39	100	27	12	20
3	15	60	24	18	83	19	12	20	40	27	12	14
4	14	35	25	18	378	19	13	14	4980	27	12	13
5	12	27	24	17	52	17	13	13	706	27	13	15
6	11	24	22	17	30	18	14	12	120	27	12	185
7	12	23	22	18	25	18	15	12	305	25	13	620
8	12	22	20	43	22	18	15	12	105	27	12	74
9	13	22	20	51	21	18	13	14	83	25	12	27
10	13	23	19	35	21	19	12	97	50	24	12	24
11	13	22	20	22	20	18	12	58	42	21	12	23
12	13	22	18	20	21	32	13	17	39	19	12	22
13	13	23	17	19	21	21	13	12	130	18	11	21
14	13	24	15	18	23	17	12	15	56	19	11	20
15	248	24	15	18	22	22	10	168	41	19	11	20
16	52	23	16	19	21	19	10	31	35	19	11	18
17	21	22	16	21	21	16	11	19	35	19	10	18
18	18	22	16	23	21	16	11	15	800	19	13	17
19	111	22	15	20	22	17	14	13	200	20	15	17
20	382	20	16	20	20	15	13	12	59	20	15	16
21	176	21	17	20	20	15	12	11	47	18	15	19
22	80	22	18	19	21	16	12	11	44	18	15	17
23	39	21	18	19	21	16	9.9	10	42	17	12	16
24	32	297	18	19	20	15	9.9	9.7	40	16	12	16
25	27	460	17	20	20	15	9.6	47	38	15	12	15
26	26	126	17	19	21	15	10	90	35	15	11	15
27	25	401	18	18	20	14	11	270	33	15	11	15
28	26	166	17	19	20	15	11	187	31	14	11	15
29	25	42	17	20	---	14	10	27	30	14	16	16
30	25	33	18	21	---	14	17	22	29	14	13	16
31	24	---	17	22	---	13	---	456	---	14	12	---
TOTAL	1538	2294	586	667	1046	539	366.4	1766.7	8702	627	385	1358
MEAN	49.6	76.5	18.9	21.5	37.4	17.4	12.2	57.0	290	20.2	12.4	45.3
MAX	382	460	29	51	378	32	17	456	4980	28	16	620
MIN	11	20	15	17	19	13	9.6	9.7	29	14	10	13
CFSM	.26	.40	.10	.11	.20	.09	.06	.30	1.53	.11	.07	.24
IN.	.30	.45	.12	.13	.21	.11	.07	.35	1.71	.12	.08	.27
AC-FT	3050	4550	1160	1320	2070	1070	727	3500	17260	1240	764	2690

CAL YR 1985 TOTAL 21935.4 MEAN 60.1 MAX 2950 MIN 9.1 CFSM .32 IN. 4.32 AC-FT 43510
WTR YR 1986 TOTAL 19875.1 MEAN 54.5 MAX 4980 MIN 9.6 CFSM .29 IN. 3.91 AC-FT 39420

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: November 1968 to current year. Sediment analyses: October 1968 to September 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
MAY											
27...	1230	138	325	7.60	22.5	30	60	6.9	81	3.8	--
JUN											
04...	1635	11400	132	7.90	21.5	100	550	7.2	84	5.2	--
18...	1108	1060	256	7.80	25.0	40	180	6.8	84	6.6	28000

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
MAY											
27...	20000	130	20	40	6.6	15	0.6	4.4	107	27	16
JUN											
04...	--	51	13	18	1.4	3.1	0.2	4.4	38	20	3.0
18...	200000	93	13	31	3.9	12	0.6	5.8	80	28	9.7

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
MAY											
27...	0.2	8.4	180	165	32	0.66	0.04	0.70	0.09	[illegible].81	0.9
JUN											
04...	0.1	6.5	79	1250	144	0.35	0.05	0.40	0.16	0.74	0.9
18...	0.2	7.7	150	383	60	0.35	0.05	0.40	0.13	0.87	1.0

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)
MAY											
27...	0.21	10	4	51	<1	<10	2	33	<5	3	<0.1
JUN											
04...	0.43	23	3	27	<1	<10	3	34	<5	<1	<0.1
18...	0.47	18	--	--	--	--	--	--	--	--	--

DATE	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
MAY											
27...	<1	<1	8	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.21
JUN											
04...	<1	<1	5	<0.1	<0.1	<0.01	0.1	<0.01	<0.01	<0.01	0.35
18...	--	--	--	--	--	--	--	--	--	--	--

DATE	DIELDRIN TOTAL (UG/L)	DISYSTON TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
MAY											
27...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01
JUN											
04...	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.02	<0.01	<0.01
18...	--	--	--	--	--	--	--	--	--	--	--

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/l)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
MAY										
27...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	0.06	<0.01	<0.01
JUN										
04...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	0.03	<0.01	<0.01
18...	--	--	--	--	--	--	--	--	--	--

08178880 MEDINA RIVER AT BANDERA, TX

LOCATION.--Lat 29°43'25", long 99°04'11", Bandera County, Hydrologic Unit 12100302, on left bank, 40 ft downstream from centerline of State Highway 173 at Bandera, 1.9 mi upstream from Bandera Creek, and 5.6 mi downstream from Indian Creek.

DRAINAGE AREA.--427 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,189.46 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good except those for discharges above 1,000 cfs, which are fair. Several small diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,400 ft³/s Dec. 31, 1984 (gage height, 16.09 ft); minimum daily, 2.2 ft³/s Aug. 7, 11, 13, 14, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1880, 46.62 ft Aug. 2, 1978.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 7,640 ft³/s June 18 at 1000 hours (gage height, 14.53 ft); minimum daily, 30 ft³/s Apr. 28, Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	103	130	84	67	63	51	81	317	352	99	83
2	98	108	121	86	69	65	51	54	263	341	93	300
3	87	104	117	84	128	69	51	47	231	332	93	386
4	77	98	117	83	142	67	52	43	239	320	86	234
5	69	89	109	78	121	65	52	42	211	307	82	179
6	61	86	105	79	110	65	51	41	199	297	75	1460
7	57	81	103	77	107	65	49	39	243	287	73	719
8	55	76	101	88	102	65	52	41	224	278	70	405
9	53	73	100	96	100	65	52	94	246	270	70	349
10	52	71	100	97	98	65	52	504	204	258	65	301
11	52	86	146	93	96	65	52	246	192	249	57	266
12	49	82	130	90	94	61	54	174	193	237	53	254
13	48	73	125	88	92	61	54	146	236	235	53	265
14	48	71	117	84	93	61	54	129	223	252	50	230
15	231	70	114	80	89	61	54	122	189	235	48	201
16	165	73	112	81	90	59	54	118	181	219	46	185
17	110	71	110	83	89	59	50	116	960	208	42	169
18	75	71	108	85	85	57	50	110	2250	198	41	153
19	274	68	104	81	83	57	50	102	816	188	38	142
20	396	62	104	77	81	56	47	94	672	177	35	136
21	300	64	105	77	77	54	43	87	580	172	30	125
22	271	66	103	74	74	54	41	81	527	164	31	120
23	232	65	101	73	74	56	38	74	491	157	37	116
24	197	64	96	72	75	56	36	72	466	147	43	109
25	176	62	93	72	75	54	37	77	451	141	47	106
26	161	65	92	69	73	54	34	135	430	134	48	101
27	146	233	93	69	71	54	31	262	416	130	47	99
28	132	157	91	69	67	51	30	336	397	123	44	94
29	122	143	89	69	---	48	33	248	381	115	40	98
30	113	137	88	67	---	49	75	199	367	109	37	93
31	107	---	86	67	---	51	---	263	---	103	33	---
TOTAL	4129	2672	3310	2472	2522	1832	1430	4177	12795	6735	1706	7478
MEAN	133	89.1	107	79.7	90.1	59.1	47.7	135	427	217	55.0	249
MAX	396	233	146	97	142	69	75	504	2250	352	99	1460
MIN	48	62	86	67	67	48	30	39	181	103	30	83
AC-FT	8190	5300	6570	4900	5000	3630	2840	8290	25380	13360	3380	14830

CAL YR 1985 TOTAL 55774 MEAN 153 MAX 1120 MIN 20 AC-FT 110600
WTR YR 1986 TOTAL 51258 MEAN 140 MAX 2250 MIN 30 AC-FT 101700

08178880 MEDINA RIVER AT BANDERA, TX--Continued

LOCATION.--Lat 29°43'25", long 99°04'11", Bandera County, Hydrologic Unit 12100302, on left bank 40 ft downstream from centerline of State Highway 173, 1.9 mi upstream from Bandera Creek, and 5.6 mi downstream from Indian Creek.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1983 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
FEB 11...	1720	98	546	8.00	11.5	5	1.0	--	--	0.5	K19
JUN 01...	1500	305	469	8.10	24.5	5	4.0	8.2	101	0.6	K140
AUG 04...	1700	87	583	7.90	29.0	5	2.2	7.4	--	0.6	110

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
FEB 11...	K8	290	91	85	19	8.3	0.2	1.3	200	89	8.5
JUN 01...	150	220	39	65	15	5.2	0.2	1.2	185	44	8.3
AUG 04...	86	290	100	85	20	7.6	0.2	1.5	194	97	11

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
FEB 11...	0.2	10	340	4	2	--	<0.01	0.40	0.02	--	<0.2
JUN 01...	0.2	9.9	260	14	5	--	<0.01	0.30	0.03	0.27	0.3
AUG 04...	0.2	13	350	2	1	0.39	<0.01	0.40	0.03	0.17	<0.2

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)
FEB 11...	<0.01	0.6	<1	44	<1	<10	1	4	1	2	<0.1
JUN 01...	0.01	2.0	--	--	--	--	--	--	--	--	--
AUG 04...	0.01	2.2	<1	51	<1	<10	<1	7	<5	1	<0.1

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
FEB 11...	<1	<1	10	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01
JUN 01...	--	--	--	--	--	--	--	--	--	--	--
AUG 04...	<1	<1	<3	--	--	--	--	--	--	--	--

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
FEB 11...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
JUN 01...	--	--	--	--	--	--	--	--	--	--
AUG 04...	--	--	--	--	--	--	--	--	--	--

08178880 MEDINA RIVER AT BANDERA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
FEB										
11...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
JUN										
01...	--	--	--	--	--	--	--	--	--	--
AUG										
04...	--	--	--	--	--	--	--	--	--	--

08179500 MEDINA LAKE NEAR SAN ANTONIO, TX

LOCATION.--Lat 29°32'24", long 98°56'01", Medina County, Hydrologic Unit 12100302, at gate-operating platform, 576 ft from left end of Medina Dam on Medina River, 4.2 mi upstream from Medina diversion dam, 13 mi north of Castroville, 28 mi west of San Antonio, and 70.4 mi upstream from mouth. Water-quality sampling site at the center of low-water bridge 0.6 mi downstream.

DRAINAGE AREA.--634 mi².

PERIOD OF RECORD.--May 1913 to current year. Prior to October 1965, monthend contents only.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Nonrecording gage read once daily if stage changing materially, otherwise intermittently. Datum of gage is 7.80 ft below National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a gravity-type concrete dam, 1,580 ft long. The dam was completed and storage began May 7, 1913. The uncontrolled spillway is a cut through natural rock 880 ft long, with a 3-foot-wide cutoff wall, locate near right end of dam. The dam and lake are owned and operated by Bexar-Medina-Atascosa Counties Water Improvement District No. 1, that has a permit (from the Texas Department of Water Resources) to irrigate 150,000 acres annually. An undetermined amount of water from the lake enters the Edwards and associated limestones in the Balcones Fault Zone, part of which is above and part below the dam. Water is released downstream to Medina Diversion Reservoir where it is diverted into Medina Canal by the Water District. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam..	1,084.0	-
Crest of spillway..	1,072.0	254,000
Water-supply outlet pipes (invert)..................................	966.5	4,780
Lowest gated outlet (invert)..	920.0	0

COOPERATION.--Capacity table, based on survey made prior to June 1912, and gage-height record were provided by the Bexar-Medina-Atascosa Counties Water Improvement District No. 1.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents observed, 288,800 acre-ft Sept. 16, 1919 (gage height, 1,078.0 ft); minimum observed since lake first filled, 780 acre-ft about Apr. 11, 1948 (gage height, 944.0 ft).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents, 189,900 acre-ft July 15-21 (gage height, 1,059.5 ft); minimum, 124,400 acre-ft Oct. 14 (gage height, 1,042.8 ft).

Capacity table (gage height, in feet, and contents, in acre-feet)

1,040.0	114,500	1,055.0	171,000
1,045.0	132,200	1,060.0	192,000
1,050.0	150,000		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125100	135400	141100	147100	148900	152500	148500	142200	145300	187000	187400	178500
2	125900	135800	141100	147100	148900	152500	148500	142200	145300	187400	187400	178100
3	125900	136100	140700	147100	148900	152500	148500	141800	146100	187800	187000	178100
4	125900	136100	141400	147100	150000	152100	148500	141400	147100	189100	186500	178100
5	125500	136100	141400	147100	150400	152100	148200	141100	147800	188600	186100	178100
6	125500	136500	141800	147100	150400	152100	147800	140700	149200	189100	185700	178500
7	125500	136500	142200	147500	150800	152100	147800	140400	150000	189100	185700	180600
8	125500	136800	142200	147500	150800	151600	147800	140400	150800	189100	185300	181500
9	125100	136800	142200	147800	150800	151600	147800	140400	150800	189100	184900	181500
10	125100	137200	142500	147800	150800	151600	148200	140700	151600	189500	184900	181900
11	125100	137200	143200	147800	151200	151600	147800	141100	152100	189500	184400	181900
12	125100	137200	143200	147800	151200	151600	147800	141100	152500	189500	184000	182300
13	124800	137500	143900	148200	151600	151600	147100	141100	152900	189500	183600	182300
14	124400	137500	143900	148200	151600	151600	147100	141100	153300	189500	183600	182300
15	125500	137500	144300	148200	151600	151600	146800	141400	154200	189900	183200	182300
16	125500	137900	144600	148200	152100	151600	146400	141400	154200	189900	183200	182700
17	125500	137900	144600	148500	152100	150800	146400	141400	154600	189900	182700	182700
18	125900	137900	145000	148500	152500	150800	146100	141400	163800	189900	182300	182700
19	128700	138300	145300	148500	152900	150800	146100	141400	173900	189900	182300	182700
20	130100	138600	145300	148900	152900	150800	145700	141800	176900	189900	181900	182700
21	130800	138300	145700	148500	152900	150400	145700	141400	179400	189900	181900	182300
22	131900	138300	146100	148500	153300	150000	145000	141400	180600	189100	181500	182300
23	132600	138300	146100	148900	152900	150000	144600	141400	181500	189100	180600	181900
24	133300	138600	146100	148500	152900	150000	144300	141100	182300	189100	180200	181900
25	134000	138600	146100	148500	152500	149600	144300	141100	183600	188600	179800	181900
26	134400	138600	146100	148500	152500	149600	143900	141400	184400	188600	179400	181500
27	134700	139300	146400	148500	152500	149600	143600	141800	185300	189500	179400	181900
28	134700	139700	146400	148500	152500	149200	142900	143200	186100	188600	179000	181900
29	135100	140400	146800	148500	---	149200	142900	143600	186100	188200	179000	181500
30	135400	140700	146800	148900	---	148900	142500	144600	186500	187800	178500	181100
31	135400	---	146800	148900	---	148900	---	145300	---	187400	178500	---
MAX	135400	140700	146800	148900	153300	152500	148500	145300	186500	189900	187400	182700
MIN	124400	135400	140700	147100	148900	148900	142500	140400	145300	187000	178500	178100
(†)	1045.9	1047.4	1049.1	1049.7	1050.6	1049.7	1047.9	1048.7	1058.7	1058.9	1056.8	1057.4
(‡)	+9500	+5300	+6100	+2100	+3600	-3600	-6400	+2800	+41200	-900	-8900	+2600

CAL YR 1985 MAX 146800 MIN 80740 (‡) -75840
WTR YR 1986 MAX 189900 MIN 124400 (‡) +55200

(†) Elevation, in feet, at end of month.
(‡) Change in contents, in acre-feet.

08160000 MEDINA CANAL NEAR RIOMEDINA, TX

LOCATION.--Lat 29°30'19", long 98°54'11", Medina County, Hydrologic Unit 12100302, in center of canal, 350 ft downstream from county highway bridge, 1,900 ft downstream from head of canal and diversion dam, 4.6 mi downstream from Medina Dam, 4.7 mi north of Riomedina, and 25 mi northwest of San Antonio.

PERIOD OF RECORD.--March 1922 to May 1934, July 1957 to current year.

REVISED RECORDS.--WSP 568: 1922. WSP 1712: 1922(M), 1924, 1926.

GAGE.--Water-stage recorder. Elevation of gage is 910 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Station is above all diversions from canal. Canal diverts from right end of Medina Diversion Dam 1,900 ft upstream from gage for irrigation downstream near Lacoste and Natalia. Prior to November 1984, double-barrel flume in canal 54 ft downstream from gage.

AVERAGE DISCHARGE.--40 years (water years 1923-33, 1958-86), 42.7 ft³/s (30,940 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 216 ft³/s May 6, 1971; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	29	19	71	102	157	.00	46	124	51
2	.00	.00	.00	29	10	71	102	142	.00	46	126	38
3	.00	.00	4.0	30	9.4	71	85	117	.00	47	125	43
4	.00	.00	14	30	.00	71	63	105	.00	62	125	51
5	42	.00	13	31	.00	58	44	97	.00	62	120	57
6	85	.00	12	32	.00	57	38	89	.00	67	104	64
7	74	.00	16	32	.00	58	68	88	.00	78	105	23
8	86	.00	26	12	.00	60	63	83	.00	82	105	.00
9	61	.00	32	.00	.00	60	61	77	.00	93	105	.00
10	60	.00	20	3.5	.00	61	64	78	.00	96	106	.00
11	56	33	14	11	.00	51	62	78	.00	94	114	.00
12	52	41	6.8	10	.00	45	68	70	.00	89	116	20
13	51	29	.00	21	.00	55	89	63	.00	84	114	33
14	53	28	.00	30	5.2	62	98	72	12	82	110	33
15	20	23	.00	29	13	62	117	14	52	79	109	58
16	.00	11	15	28	13	62	129	3.0	50	76	107	69
17	.00	17	30	27	24	62	126	19	39	99	106	61
18	.00	31	30	27	33	54	123	25	14	100	109	52
19	.45	31	29	26	33	53	120	38	28	95	118	56
20	.00	31	29	26	37	64	120	49	24	95	123	55
21	.00	30	29	23	40	64	127	48	13	96	130	53
22	.00	30	28	12	39	63	126	58	19	99	133	54
23	.00	29	28	9.6	37	62	141	62	44	107	128	51
24	.00	29	23	9.5	45	71	148	62	23	115	122	49
25	.00	28	17	9.4	68	75	148	61	4.7	115	108	50
26	.00	26	16	9.3	76	78	145	20	18	114	106	52
27	.00	9.1	25	11	76	82	147	.01	18	117	101	53
28	.00	.00	31	17	73	96	147	.00	18	119	79	54
29	.00	.00	31	17	---	102	149	.00	18	125	72	53
30	.00	.00	30	21	---	101	153	.00	30	123	80	60
31	.00	---	30	26	---	101	---	.05	---	125	72	---
TOTAL	640.45	456.10	578.80	628.30	650.60	2103	3173	1775.06	424.70	2827	3402	1293.00
MEAN	20.7	15.2	18.7	20.3	23.2	67.8	106	57.3	14.2	91.2	110	43.1
MAX	86	41	32	32	76	102	153	157	52	125	133	69
MIN	.00	.00	.00	.00	.00	45	38	.00	.00	46	72	.00
AC-FT	1270	905	1150	1250	1290	4170	6290	3520	842	5610	6750	2560

CAL YR 1985 TOTAL 11703.25 MEAN 32.1 MAX 166 MIN .00 AC-FT 23210
WTR YR 1986 TOTAL 17952.01 MEAN 49.2 MAX 157 MIN .00 AC-FT 35610

08180700 MEDINA RIVER NEAR MACDONA, TX

LOCATION.--Lat 29°20'05", long 98°41'22", Bexar County, Hydrologic Unit 12100302, at downstream side of Loop 1604 bridge, 0.1 mi downstream from Polecat Creek, 0.7 mi north of Macdona, 2.2 mi downstream from Potranca Creek, and 21.2 mi up-stream from mouth.

DRAINAGE AREA.--885 mi^2, of which 634 mi^2 is above dam forming Medina Lake.

PERIOD OF RECORD.--January 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 589.86 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Apr. 12-14. Records good. Flow is regulated by Medina Lake (station 08179500) and by Medina Diversion Lake (capacity, 4,500 acre-ft) 41 mi upstream. For diversion of canal records, see Medina Canal near Riomedina (station 08180000). A large part of the streamflow is lost into the Edwards and associated limestones where the Balcones Fault crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. There are several small diversions below Medina Diversion Dam. Two observations of water temperature were made during the year.

AVERAGE DISCHARGE.--5 years, 64.7 ft^3/s (46,880 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,810 ft^3/s June 15, 1981 (gage height, 16.08 ft); minimum daily, 14 ft^3/s Jan. 11, 12, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,000 ft^3/s June 4 at 2000 hours (gage height, 14.86 ft); minimum daily, 26 ft^3/s Apr. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	75	59	48	53	39	40	34	255	112	53	59
2	38	72	56	48	53	39	41	34	113	100	53	56
3	38	76	54	48	60	39	42	34	77	92	53	57
4	36	78	54	48	60	41	43	36	2820	88	53	52
5	36	76	54	48	57	37	42	38	1620	86	54	52
6	34	75	53	48	51	37	38	37	430	83	53	52
7	34	73	54	48	49	37	38	35	315	82	54	87
8	34	71	54	49	47	38	38	34	372	81	53	91
9	32	67	54	51	45	41	37	37	401	80	53	65
10	33	66	53	53	44	44	37	47	229	77	53	58
11	33	70	53	52	44	44	37	43	196	74	53	53
12	31	72	53	50	44	43	36	39	179	72	53	57
13	31	67	53	50	44	44	35	38	165	70	52	64
14	31	62	54	50	44	43	35	35	155	71	53	55
15	62	61	53	49	44	43	34	41	143	71	52	53
16	58	60	53	50	43	43	31	42	126	68	49	52
17	42	60	54	53	43	43	29	44	113	66	48	50
18	37	60	54	52	44	43	30	41	241	65	48	48
19	214	61	53	51	44	40	31	39	654	63	48	48
20	944	60	53	51	42	40	29	39	233	63	45	48
21	242	57	52	51	39	40	29	35	204	62	47	46
22	187	56	52	51	39	40	31	35	180	61	46	53
23	149	56	52	50	39	42	29	32	160	59	46	49
24	123	60	52	49	39	43	27	32	147	59	48	46
25	110	59	50	49	39	43	26	33	129	58	50	44
26	99	60	49	49	39	41	27	39	139	58	50	45
27	87	67	49	51	39	40	30	47	133	58	49	45
28	82	69	49	51	39	40	32	60	126	56	48	44
29	81	64	49	53	---	40	33	45	122	55	48	46
30	80	61	49	53	---	41	36	40	117	54	49	47
31	79	---	49	53	---	41	---	575	---	53	50	---
TOTAL	3158	1971	1630	1557	1267	1269	1023	1740	10294	2197	1564	1622
MEAN	102	65.7	52.6	50.2	45.3	40.9	34.1	56.1	343	70.9	50.5	54.1
MAX	944	78	59	53	60	44	43	575	2820	112	54	91
MIN	31	56	49	48	39	37	26	32	77	53	45	44
AC-FT	6260	3910	3230	3090	2510	2520	2030	3450	20420	4360	3100	3220

CAL YR 1985 TOTAL 17613 MEAN 48.3 MAX 944 MIN 14 AC-FT 34940
WTR YR 1986 TOTAL 29292 MEAN 80.3 MAX 2820 MIN 26 AC-FT 58100

08180800 MEDINA RIVER NEAR SOMERSET, TX

LOCATION.--Lat 29°15'45", long 98°34'56", Bexar County, Hydrologic Unit 12100302, on left bank 300 ft upstream from bridge on State Highway 16, 2.1 mi upstream from Elm Creek, 4.9 mi downstream from Medio Creek, 5.2 mi northeast of Somerset, and 14.1 mi upstream from mouth.

DRAINAGE AREA.--967 mi^2, of which 634 mi^2 is above dam forming Medina Lake.

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 493.56 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow is regulated by Medina Lake (station 08179500) 56 mi upstream and by Medina Diversion Lake (capacity, 4,500 acre-ft). For diversion of canal records, see Medina Canal near Riomedina (station 08180000). A large part of the streamflow is lost into the Edwards and associated limestones in the Balcones Fault Zone, that crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. There are several small diversions below Medina Diversion Dam. Two observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--16 years, 216 ft^3/s (156,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,500 ft^3/s July 17, 1973 (gage height, 29.39 ft); minimum daily, 16 ft^3/s Sept. 19, 20, 1984.
Maximum stage since about 1890, that of July 17, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,210 ft^3/s about June 4 (gage height, 19.85 ft, from floodmark); minimum daily, 37 ft^3/s Apr. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	87	80	68	66	55	51	42	648	132	68	85
2	53	91	76	67	68	53	51	43	222	126	66	80
3	49	94	74	66	80	55	50	42	234	116	65	74
4	47	89	74	66	137	56	50	42	2220	115	64	67
5	46	83	73	63	93	52	49	44	4340	110	65	65
6	45	80	72	62	78	51	51	47	710	108	64	107
7	45	78	72	63	72	60	51	46	520	101	63	285
8	47	78	72	67	68	54	50	45	367	100	63	175
9	47	78	72	69	66	54	47	45	568	98	63	104
10	47	78	72	71	64	56	44	63	329	95	63	84
11	47	79	72	70	63	55	44	61	262	94	62	75
12	45	82	71	68	63	54	44	53	235	92	62	72
13	43	80	70	67	62	54	43	49	217	91	61	71
14	44	77	69	66	62	56	43	47	200	91	62	71
15	88	75	70	66	62	56	42	62	187	90	61	70
16	105	73	71	64	61	57	43	64	175	87	61	69
17	68	73	72	76	60	58	41	72	169	86	60	66
18	54	73	73	82	60	57	40	61	369	85	59	65
19	97	74	71	70	61	55	43	55	774	83	59	65
20	806	73	72	66	67	55	42	52	350	81	56	65
21	439	71	71	64	58	54	41	47	258	80	55	64
22	243	71	70	62	55	54	40	46	232	78	55	73
23	172	71	70	61	55	55	40	46	190	77	56	75
24	135	75	69	61	55	54	39	43	180	77	57	66
25	118	81	68	62	55	54	38	44	159	76	60	62
26	108	78	66	61	55	54	37	54	154	75	68	61
27	99	89	68	61	55	53	38	112	154	75	62	60
28	92	118	68	62	55	50	39	101	146	73	60	60
29	88	91	70	65	---	49	40	77	141	72	61	60
30	87	83	75	66	---	50	45	62	137	70	60	61
31	85	---	69	66	---	51	---	540	---	68	63	---
TOTAL	3556	2423	2212	2048	1856	1681	1316	2207	14847	2802	1904	2457
MEAN	115	80.8	71.4	66.1	66.3	54.2	43.9	71.2	495	90.4	61.4	81.9
MAX	806	118	80	82	137	60	51	540	4340	132	68	285
MIN	43	71	66	61	55	49	37	42	137	68	55	60
AC-FT	7050	4810	4390	4060	3680	3330	2610	4380	29450	5560	3780	4870

CAL YR 1985 TOTAL 22510 MEAN 61.7 MAX 806 MIN 26 AC-FT 44650
WTR YR 1986 TOTAL 39309 MEAN 108 MAX 4340 MIN 37 AC-FT 77970

08181400 HELOTES CREEK AT HELOTES, TX

LOCATION.--Lat 29°34'42", long 98°41'29", Bexar County, Hydrologic Unit 12100302, 42 ft to left and 44 ft downstream from centerline of bridge on State Highway 16, 0.1 mi northwest of Helotes, and 8.6 mi upstream from mouth.

DRAINAGE AREA.--15.0 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1968 to current year.

REVISED RECORDS.--WDR TX-73-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 1,014.82 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 21 to Nov. 24. Records good except for estimated daily discharges, which are poor. An undetermined amount of flow is diverted for domestic use above station, and some streamflow enters the Edwards and associated limestones through the Balcones Fault Zone in the vicinity of the gage. Recording rain gage at station.

AVERAGE DISCHARGE.--18 years, 4.04 ft³/s (3.66 in/yr), 2,930 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,680 ft³/s July 16, 1973 (gage height, 10.8 ft, from floodmarks), from rating curve extended above 5,000 ft³/s; no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1923, 13.7 ft in 1927, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 140 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	1400	499	3.32	June 4	0430	194	2.81
May 31	1230	*640	*3.59	18	0730	607	3.58

Minimum daily discharge, no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.15	3.2	.00	.00	.00	.00	.00	36	4.3	.00	.01
2	.00	.03	2.3	.00	.00	.00	.00	.00	21	2.7	.00	.00
3	.00	.00	1.5	.00	.09	.00	.00	.00	14	1.1	.00	.00
4	.00	.00	1.4	.00	.00	.00	.00	.00	76	.11	.00	.00
5	.00	.00	.67	.00	.00	.00	.00	.00	54	.00	.00	.00
6	.00	.00	.27	.00	.00	.00	.00	.00	35	.00	.00	.00
7	.00	.00	.18	.00	.00	.00	.00	.00	29	.00	.00	.79
8	.00	.00	.03	.00	.00	.00	.00	.00	24	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.09	21	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	17	.00	.00	.00
11	.00	.00	.07	.00	.00	.00	.00	.00	14	.00	.00	.00
12	.00	.00	.01	.00	.00	.00	.00	.00	11	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	9.5	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.08	8.0	.00	.00	.00
15	.09	.00	.00	.00	.00	.00	.00	.00	6.5	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	4.8	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	243	.00	.00	.00
19	96	.00	.00	.00	.00	.00	.00	.00	162	.00	.00	.00
20	61	.00	.00	.00	.00	.00	.00	.00	96	.00	.00	.00
21	40	.00	.00	.00	.00	.00	.00	.00	63	.00	.00	.00
22	30	.00	.00	.00	.00	.00	.00	.00	45	.00	.00	.00
23	25	.00	.00	.00	.00	.00	.00	.00	33	.00	.00	.00
24	18	.00	.00	.00	.00	.00	.00	.00	27	.00	.00	.00
25	12	.00	.00	.00	.00	.00	.00	.98	22	.00	.00	.00
26	10	.00	.00	.00	.00	.00	.00	.33	18	.00	.00	.00
27	5.0	1.3	.00	.00	.00	.00	.00	1.1	15	.00	.00	.00
28	2.0	7.2	.00	.00	.00	.00	.00	.00	12	.00	.00	.00
29	1.2	4.9	.00	.00	---	.00	.00	.00	9.6	.00	.00	.00
30	.50	3.7	.00	.00	---	.00	.00	.00	7.6	.00	.00	.00
31	.35	---	.00	.00	---	.00	---	95	---	.00	.09	---
TOTAL	301.14	17.28	9.63	.00	.09	.00	.00	97.58	1137.0	8.21	.09	.80
MEAN	9.71	.58	.31	.00	.00	.00	.00	3.15	37.9	.26	.00	.03
MAX	96	7.2	3.2	.00	.09	.00	.00	95	243	4.3	.09	.79
MIN	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00
CFSM	.65	.04	.02	.00	.00	.00	.00	.21	2.53	.02	.00	.00
IN.	.75	.04	.02	.00	.00	.00	.00	.24	2.82	.02	.00	.00
AC-FT	597	34	19	.00	.2	.00	.00	194	2260	16	.2	1.6

CAL YR 1985 TOTAL 2507.68 MEAN 6.87 MAX 361 MIN .00 CFSM .46 IN. 6.22 AC-FT 4970
WTR YR 1986 TOTAL 1571.82 MEAN 4.31 MAX 243 MIN .00 CFSM .29 IN. 3.90 AC-FT 3120

08181400 HELOTES CREEK AT HELOTES, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: May 1969 to current year. Pesticide analyses: May 1969 to June 1981, October 1984 to current year. Sediment analyses: October 1968 to September 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 21...	1225	31	462	8.60	17.0	15	17	8.3	88	0.5	1400
MAY 31...	1320	586	303	7.80	--	--	--	--	--	5.0	--
JUN 04...	0854	71	414	7.90	21.0	25	15	7.3	85	1.6	--
18...	1030	424	324	7.90	22.5	40	30	6.5	77	2.1	12000

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 21...	4000	230	14	74	10	6.6	0.2	1.4	212	19	11
MAY 31...	--	140	19	45	6.5	5.7	0.2	2.9	120	16	11
JUN 04...	23000	200	11	63	9.8	6.1	0.2	1.7	187	19	9.2
18...	22000	150	5	48	7.0	4.3	0.2	2.4	144	13	6.5

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
OCT 21...	<0.1	9.6	260	20	<1	1.19	0.01	1.20	0.04	0.36	0.4
MAY 31...	<0.1	8.3	170	--	--	--	--	--	--	--	--
JUN 04...	0.1	9.4	230	28	15	0.79	0.01	0.80	0.05	0.45	0.5
18...	<0.1	8.1	180	70	31	0.59	0.01	0.60	0.03	0.47	0.5

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT 21...	<0.01	3.0	<1	29	<1	<10	1	9	1	3	<0.1
MAY 31...	--	--	<1	24	2	<10	2	61	6	4	<0.1
JUN 04...	0.05	--	--	--	--	--	--	--	--	--	--
18...	0.06	9.8	--	--	--	--	--	--	--	--	--

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
OCT 21...	<1	<1	6	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01
MAY 31...	<1	<1	43	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	0.01
JUN 04...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

08181400 HELOTES CREEK AT HELOTES, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	DI-ELDRIN TOTAL (UG/L)	DI-SYSTON TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
OCT											
21...	<0.01	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MAY											
31...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
OCT										
21...	<0.01	<0.1	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
MAY										
31...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
JUN										
04...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX

LOCATION.--Lat 29°19'47", long 98°35'02", Bexar County, Hydrologic Unit 12100302, on left bank between bridges on Interstate Highway 35 in San Antonio, 1.7 mi northeast of the intersection of Interstate Highway 35 and Loop 410, and 11.8 mi upstream from mouth.

DRAINAGE AREA.--219 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 573.49 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: May 16 to June 5, 1985, Mar. 2-6 and Aug. 13, 14, 16-18, 1986. Records good except for May 16 to June 5, 1985, which are fair. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft³/s June 4, 1986 (gage height, 18.26 ft); minimum daily, 2.6 ft³/s Feb. 18, 1985.

EXTREMES FOR WATER YEAR 1985.--Maximum discharge, 3,600 ft³/s about June 7 (gage height, 11.89 ft, from floodmark); minimum daily, 2.6 ft³/s Feb. 18.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,900 ft³/s June 4 at 1430 hours (gage height, 18.26 ft); minimum daily, 4.6 ft³/s May 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	7.5	8.1	16	3.4	22	8.9	12	10	10	17	4.6
2	4.2	7.5	7.5	18	3.2	14	9.8	10	10	10	18	3.7
3	4.4	6.9	8.2	18	3.6	12	9.5	11	11	48	12	4.2
4	4.5	5.9	11	13	5.5	12	9.2	9.8	10	147	12	5.1
5	4.7	5.9	17	10	5.0	12	8.9	9.2	20	65	13	5.1
6	5.5	6.5	13	8.8	4.0	10	8.5	9.3	698	22	16	56
7	23	7.0	10	7.8	3.6	11	7.5	9.5	1660	17	16	8.8
8	6.8	7.0	9.8	8.6	3.2	13	23	9.3	176	14	16	5.0
9	7.8	6.9	11	7.5	3.1	11	12	9.5	65	13	15	5.3
10	19	6.2	10	9.7	3.0	9.9	61	9.3	33	12	15	5.4
11	236	5.0	11	8.6	2.9	10	36	8.5	22	11	12	95
12	43	4.8	12	19	3.1	9.9	16	7.8	18	11	16	33
13	24	5.4	34	26	3.1	8.2	19	8.9	15	10	12	107
14	29	6.2	15	72	3.2	468	26	9.5	13	9.8	11	72
15	8.5	6.8	15	55	3.2	257	13	9.5	12	9.2	12	13
16	5.8	6.8	[illegible]	46	3.0	72	11	9.0	10	10	13	8.8
17	5.3	[illegible]	[illegible]	29	2.7	41	10	15	9.2	9.9	11	6.8
18	4.4	[illegible]	[illegible]	11	2.6	29	9.8	150	13	9.8	8.9	26
19	84	6.2	13	6.8	3.0	23	9.5	25	20	9.7	8.3	14
20	24	6.5	10	4.2	3.2	30	9.4	16	16	9.3	9.7	7.5
21	15	6.3	10	3.7	6.7	20	9.0	15	13	8.4	11	6.5
22	9.0	5.9	8.2	4.4	6.8	16	9.2	14	329	8.1	11	5.5
23	11	5.4	7.8	4.3	61	15	9.1	13	141	9.4	9.4	5.4
24	8.4	19	8.1	4.3	193	13	8.2	12	34	9.3	11	5.0
25	10	49	7.7	4.0	35	13	24	12	20	9.2	69	5.4
26	102	13	8.4	3.9	21	13	64	30	16	8.5	12	5.5
27	46	8.6	12	8.6	16	13	18	15	14	9.5	7.9	4.9
28	15	5.1	11	4.0	21	13	11	15	13	8.6	8.3	16
29	9.6	8.1	9.3	3.5	---	12	14	14	11	15	13	106
30	8.8	8.0	15	3.8	---	12	13	13	10	18	9.6	111
31	8.1	---	39	3.4	---	10	---	12	---	15	6.0	---
TOTAL	791.1	257.8	429.1	442.9	428.1	1225.0	497.5	523.1	3442.2	576.7	432.1	757.5
MEAN	25.5	8.59	13.8	14.3	15.3	39.5	16.6	16.9	115	18.6	13.9	25.2
MAX	236	49	39	72	193	468	64	150	1660	147	69	111
MIN	4.2	4.8	7.5	3.4	2.6	8.2	7.5	7.8	9.2	8.1	6.0	3.7
AC-FT	1570	511	851	878	849	2430	987	1040	6830	1140	857	1500

WTR YR 1985 TOTAL 9803.1 MEAN 26.9 MAX 1660 MIN 2.6 AC-FT 19440

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	20	16	9.1	8.8	10	7.2	6.8	950	23	6.6	65
2	16	78	13	9.0	8.0	11	7.3	6.0	135	21	6.5	12
3	10	22	13	9.4	107	11	7.6	5.1	235	20	6.8	8.6
4	8.6	14	13	8.9	56	12	7.7	4.6	4540	17	8.9	34
5	7.2	14	12	8.2	19	10	7.9	5.1	956	16	8.3	63
6	6.2	13	11	8.4	14	10	7.0	5.6	161	15	12	180
7	6.2	12	11	10	13	14	7.0	5.8	108	18	8.4	365
8	6.7	12	10	29	13	9.8	6.7	6.3	62	20	7.0	58
9	6.9	12	11	24	13	8.4	6.7	11	87	16	6.9	24
10	6.7	12	11	14	12	8.5	7.6	14	55	15	7.0	22
11	6.7	11	11	12	12	9.8	7.1	5.4	44	15	6.9	18
12	5.9	12	11	11	11	14	6.8	4.9	40	14	6.8	15
13	5.3	12	10	10	11	8.8	6.2	5.6	32	13	6.7	14
14	4.8	12	10	10	11	8.4	6.5	7.0	36	15	6.8	12
15	169	12	9.9	10	11	9.1	5.9	60	27	14	7.0	12
16	23	11	10	9.8	10	8.8	6.3	11	23	13	7.3	12
17	12	9.9	10	21	10	8.5	6.7	9.2	64	12	7.7	11
18	11	10	10	23	10	8.7	7.1	6.8	855	12	8.0	11
19	276	22	10	12	11	8.2	7.1	6.2	868	10	8.2	11
20	633	19	10	10	11	8.0	6.4	7.1	119	9.7	8.1	11
21	209	11	10	9.9	11	8.0	6.2	6.0	58	9.2	7.5	18
22	80	11	9.7	9.5	10	7.3	6.4	6.5	42	9.1	8.1	30
23	45	10	11	9.8	10	6.7	6.3	6.6	34	8.9	21	12
24	30	30	12	10	10	7.1	6.3	5.2	39	9.0	8.5	10
25	25	48	12	9.1	9.9	7.6	6.3	15	30	8.7	9.5	9.8
26	20	15	13	8.2	10	7.9	6.3	62	25	7.9	8.9	9.4
27	16	78	12	8.7	9.5	8.4	5.5	53	23	7.3	7.3	8.7
28	15	54	10	9.4	10	8.3	5.3	68	20	7.4	7.1	7.8
29	14	36	9.4	9.1	---	7.1	7.1	32	21	8.2	9.9	9.6
30	13	22	9.8	8.9	---	6.8	13	42	23	8.1	7.6	8.9
31	12	---	11	8.9	---	7.2	---	1040	---	7.3	7.1	---
TOTAL	1736.2	654.9	342.8	360.3	452.2	279.4	207.5	1529.8	9712	399.8	254.4	1082.8
MEAN	56.0	21.8	11.1	11.6	16.1	9.01	6.92	49.3	324	12.9	8.21	36.1
MAX	633	78	16	29	107	14	13	1040	4540	23	21	365
MIN	4.8	9.9	9.4	8.2	8.0	6.7	5.3	4.6	20	7.3	6.5	7.8
AC-FT	3440	1300	680	715	897	554	412	3030	19260	793	505	2150

CAL YR 1985 TOTAL 11059.0 MEAN 30.3 MAX 1660 MIN 2.6 AC-FT 21940
WTR YR 1986 TOTAL 17012.0 MEAN 46.6 MAX 4540 MIN 4.6 AC-FT 33740

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: July 1984 to current year.

INSTRUMENTATION.--Since September 1984, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,090 microsiemens Nov. 1; minimum, 120 microsiemens Sept. 6, 7.
WATER TEMPERATURE: Minimum, 9.0°C Jan. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3
JAN												
14...	1215	10	740	7.70	13.0	5	1.0	11.7	112	0.8	300	29
MAY												
27...	1306	135	198	7.20	22.5	40	170	8.1	95	6.7	81	0
31...	1445	1280	195	7.50	22.5	45	380	6.8	80	6.8	69	5
JUN												
04...	1240	9550	155	7.50	20.5	--	--	6.6	76	5.3	--	--
04...	1545	11100	146	7.90	20.0	--	--	7.8	88	3.6	63	5
05...	0830	940	263	7.50	24.0	--	--	--	--	2.8	120	21

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
JAN											
14...	97	14	43	1	3.3	271	64	51	0.4	13	450
MAY											
27...	28	2.7	8.9	0.5	3.1	--	21	8.2	0.1	5.2	--
31...	24	2.3	6.8	0.4	4.5	64	16	7.2	<0.1	8.0	110
JUN											
04...	--	--	--	--	--	64	--	--	--	--	--
04...	23	1.4	3.6	0.2	3.7	58	16	3.5	0.1	7.7	94
05...	42	2.6	7.7	0.3	5.0	95	23	7.3	0.1	12	160

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
JAN											
14...	5	1	1.58	0.02	1.60	0.07	0.53	0.6	0.10	1.9	1
MAY											
27...	345	59	0.67	0.03	0.70	0.12	2.1	2.2	0.19	25	2
31...	930	136	0.36	0.04	0.40	0.27	2.5	2.8	1.30	22	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	2
05...	--	--	--	--	--	--	--	--	--	--	2

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN											
14...	80	1	<10	2	24	4	27	1.4	<1	1	16
MAY											
27...	35	<1	<10	5	21	<5	3	<0.1	<1	<1	17
31...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	23	<1	<10	2	20	<5	<1	<0.1	<1	<1	4
05...	41	<1	<10	1	32	<5	2	<0.1	<1	<1	14

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1985	1736.2	367	222	1040	19	87	41	192	150
NOV.	1985	654.9	676	422	746	45	80	84	148	270
DEC.	1985	342.8	809	510	472	59	55	100	96	330
JAN.	1986	360.3	757	475	462	53	52	95	93	310
FEB.	1986	452.2	713	446	544	49	59	89	108	290
MAR.	1986	279.4	805	507	383	59	44	100	78	330
APR.	1986	207.5	784	493	276	56	32	100	56	320
MAY	1986	1529.8	339	204	841	15	64	37	151	130
JUNE	1986	9712	237	141	3700	9.5	250	25	647	93
JULY	1986	399.8	468	285	308	25	27	53	57	190
AUG.	1986	254.4	673	418	287	44	30	82	56	270
SEPT	1986	1082.8	450	275	805	25	73	52	152	180
TOTAL		17012.1	**	**	9900	**	852	**	1840	**
WTD.AVG.		47	353	215	**	19	**	40	**	140

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	400	310	354	1090	750	1000	730	690	713	820	780	810
2	520	410	468	610	350	543	750	720	739	830	810	822
3	590	490	542	600	520	559	770	750	755	830	800	809
4	590	570	585	800	600	698	820	720	784	810	790	805
5	600	570	591	890	810	853	900	800	842	850	790	814
6	630	600	617	900	870	895	930	830	855	850	810	831
7	650	620	628	870	820	841	920	760	833	840	800	828
8	660	630	643	1050	810	867	850	810	833	800	520	673
9	680	660	671	1020	840	889	830	810	823	710	540	620
10	710	670	704	870	840	850	830	810	822	700	580	650
11	700	660	680	840	820	828	840	800	823	760	710	741
12	730	670	694	850	820	829	840	800	819	750	710	736
13	720	680	705	920	810	843	820	760	804	740	700	718
14	720	700	708	930	880	902	820	750	787	760	730	739
15	350	170	264	890	870	881	840	820	830	790	760	772
16	640	310	474	910	890	901	850	830	838	830	760	806
17	720	650	701	900	880	894	840	810	826	820	760	805
18	720	680	697	880	850	866	860	800	833	830	790	814
19	740	140	386	850	380	803	840	810	826	830	820	826
20	320	200	243	710	350	488	840	800	821	830	810	822
21	330	230	285	860	750	834	860	820	842	820	790	811
22	460	330	411	830	800	822	920	870	901	800	760	780
23	540	460	504	810	710	755	910	830	848	790	760	774
24	620	540	587	820	490	694	830	790	806	780	750	764
25	980	620	756	800	250	531	830	780	811	760	740	753
26	990	770	847	790	690	756	780	770	778	770	760	763
27	840	820	834	740	390	568	790	760	773	760	730	740
28	940	840	880	670	370	551	810	760	782	720	710	718
29	1020	950	978	530	480	487	820	800	813	730	710	720
30	970	940	965	690	530	610	830	810	818	750	730	744
31	960	910	936	---	---	---	810	750	792	760	740	747
MONTH	1020	140	624	1090	250	761	930	690	812	850	520	766

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	760	740	748	---	---	834	840	800	815	590	410	481
2	780	750	765	---	---	826	840	780	811	620	610	615
3	780	410	641	---	---	828	830	770	802	610	590	597
4	630	430	490	---	---	821	820	790	805	640	600	623
5	750	300	670	---	---	826	840	790	823	670	620	643
6	730	720	722	---	---	831	860	830	849	660	640	656
7	760	710	739	820	760	805	860	820	832	640	600	615
8	750	730	744	830	780	812	850	820	828	620	590	609
9	760	720	737	860	780	831	860	790	825	620	320	584
10	780	710	735	850	810	827	820	790	806	490	320	391
11	810	750	783	830	750	800	960	790	877	620	430	567
12	---	---	795	810	570	691	980	900	933	650	620	631
13	---	---	798	820	600	774	970	820	872	670	610	648
14	---	---	804	870	820	840	980	830	900	680	300	611
15	---	---	806	870	700	801	830	790	809	520	160	404
16	---	---	810	810	690	753	820	780	800	500	420	471
17	---	---	812	820	780	799	820	780	797	620	500	558
18	---	---	814	840	790	811	870	790	833	620	550	578
19	---	---	808	820	800	813	800	740	759	570	540	553
20	---	---	809	830	790	809	790	750	767	560	530	546
21	---	---	815	810	780	790	910	780	832	550	530	537
22	---	---	819	1010	770	899	870	800	831	580	550	564
23	---	---	825	900	820	854	800	640	750	660	570	609
24	---	---	830	820	800	808	670	610	638	670	640	655
25	---	---	836	820	760	801	730	600	662	650	200	474
26	---	---	827	810	750	788	850	720	783	520	160	391
27	---	---	833	790	750	765	760	720	740	450	230	351
28	---	---	830	800	740	773	730	690	711	490	370	417
29	---	---	---	790	770	776	700	530	663	450	380	412
30	---	---	---	830	780	808	730	450	537	500	310	453
31	---	---	---	840	810	824	---	---	---	420	190	283
MONTH	810	300	773	1010	570	807	980	450	790	680	160	533

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	360	220	275			352	---	---	645	660	180	535
2	490	300	432			364	---	---	681	610	560	594
3	470	250	367			381	---	---	678	590	570	575
4	400	140	161			397	---	---	651	580	180	507
5	450	250	328			412	--	---	660	540	150	335
6	610	390	525			425	--	---	631	460	120	349
7	460	400	442			416	--	---	692	480	120	286
8	480	460	474			400	--	---	705	490	270	375
9	510	470	490			410	--	---	710	600	490	551
10	550	510	536			423	--	---	702	660	580	616
11	530	500	514			438	--	---	709	740	660	703
12	530	510	519			454	--	---	714	760	720	737
13	540	530	533			469	--	---	719	740	720	732
14	---	---	520			450	--	---	712	780	730	765
15	---	---	531			471	--	---	707	790	780	783
16	---	---	540			489	--	---	696	790	760	775
17	---	---	389			502	--	---	690	810	770	788
18	---	---	225			517	--	---	679	810	780	800
19	---	---	198			530	--	---	673	810	780	792
20	---	---	215			546	--	---	680	850	790	812
21	---	---	240			562	--	---	687	840	620	785
22	---	---	263			573	--	---	679	750	250	615
23	---	---	281			594	--	---	554	730	680	697
24	---	---	304			588	--	---	628	750	730	743
25	---	---	321			596	70	520	615	750	730	738
26	---	---	339			606	10	580	648	750	740	743
27	---	---	356			613	10	580	666	820	760	785
28	---	---	370			610	30	670	709	820	780	803
29	---	---	362			599	60	740	799	810	730	770
30	---	---	349			604	00	630	699	770	720	748
31	---	---	---			621	20	560	686	---	---	---
MONTH	610	140	380			497	60	520	681	850	120	661

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	19.5	18.0	18.5	19.5	18.0	19.0	18.5	16.0	17.5	---	---	---
2	19.5	18.0	18.5	18.0	15.5	16.5	15.5	13.5	14.0	16.0	14.0	15.0
3	20.0	18.0	19.0	16.5	15.5	16.0	13.5	12.5	13.0	16.0	14.0	15.0
4	21.0	19.5	20.0	17.5	16.0	16.5	16.0	13.5	14.5	17.5	15.5	16.0
5	20.0	19.0	19.5	18.0	16.5	17.0	15.5	14.0	15.0	15.5	13.5	14.0
6	19.5	18.0	18.5	18.5	17.0	18.0	15.0	13.5	14.5	14.0	12.0	13.0
7	20.0	18.0	19.0	18.5	17.5	18.5	16.0	14.0	15.0	13.5	12.5	13.0
8	21.5	20.0	20.5	20.0	18.0	19.0	16.5	15.0	16.0	12.0	10.5	11.5
9	23.5	21.5	22.5	21.0	20.0	20.5	19.0	16.5	17.5	10.5	9.5	10.0
10	24.5	22.5	23.5	22.5	21.0	22.0	20.0	19.0	19.5	11.5	9.0	10.0
11	25.0	23.5	24.0	22.5	21.5	22.0	20.0	15.5	17.5	13.0	10.5	11.5
12	24.5	23.5	24.0	22.5	21.5	22.5	15.0	13.0	14.0	14.0	11.5	12.5
13	25.0	23.5	24.5	23.5	22.5	23.0	13.0	11.5	12.5	15.0	13.0	13.5
14	25.0	24.0	24.5	23.5	22.5	23.0	11.5	10.5	11.0	14.5	12.0	13.5
15	22.5	20.5	21.5	23.5	21.0	22.5	11.5	9.5	10.5	16.0	13.0	14.5
16	21.5	21.0	21.5	21.0	19.0	19.5	12.5	10.5	11.5	16.5	15.0	16.0
17	22.5	21.5	22.0	20.0	19.0	19.5	14.0	12.5	13.0	18.0	16.5	17.0
18	24.0	22.5	23.0	22.0	20.0	21.0	15.0	13.0	14.0	17.5	15.5	16.5
19	23.5	21.0	22.0	22.0	21.0	21.5	13.5	12.5	13.0	17.5	15.5	16.5
20	21.0	20.0	20.5	21.0	17.0	18.5	14.0	12.0	13.0	17.5	15.0	16.0
21	20.5	20.0	20.5	17.0	16.0	16.5	15.0	13.0	14.0	18.5	16.0	17.0
22	21.5	20.5	21.0	18.5	17.0	17.5	16.5	14.5	15.5	17.5	16.0	17.0
23	22.0	21.5	21.5	19.5	18.5	19.0	16.0	15.0	15.5	17.0	15.5	16.0
24	23.0	22.0	22.5	21.0	19.5	20.5	15.5	14.0	15.0	18.0	16.0	17.0
25	24.0	22.0	23.0	22.0	20.5	21.5	14.5	13.0	13.5	18.0	16.0	17.0
26	23.5	22.5	23.0	22.5	21.5	22.0	14.0	12.0	13.0	16.5	14.5	15.5
27	23.0	21.5	22.0	22.0	20.0	21.0	16.5	14.0	15.5	15.0	13.0	13.5
28	21.5	20.5	21.0	19.5	17.5	19.0	16.5	15.0	15.5	15.5	12.0	14.0
29	21.0	20.0	20.5	17.5	16.5	17.0	15.5	14.0	15.0	17.0	14.0	15.5
30	20.5	19.5	20.0	18.5	17.0	17.5	16.0	14.5	15.0	18.0	15.5	16.5
31	19.5	18.5	19.5	---	---	---	---	---	---	19.0	17.0	18.0
MONTH	25.0	18.0	21.5	23.5	15.5	19.5	20.0	9.5	14.5	19.0	9.0	14.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	20.0	18.5	19.5	---	---	---	22.0	20.5	21.0	25.0	23.5	24.0
2	20.5	19.5	20.0	---	---	---	23.0	20.5	21.5	23.0	22.0	23.0
3	20.5	19.5	19.5	---	---	---	22.5	21.5	22.0	22.5	21.5	22.0
4	19.5	18.0	18.5	---	---	---	23.0	21.5	22.5	22.5	21.5	22.0
5	19.5	12.0	17.0	---	---	---	24.0	22.5	23.0	23.0	22.0	22.5
6	13.0	11.5	12.5	---	---	---	23.5	22.5	23.0	24.5	22.5	23.5
7	15.0	13.0	13.5	20.0	17.5	19.0	24.0	22.5	23.0	24.0	23.0	23.5
8	17.5	15.0	16.0	21.0	18.5	20.0	25.0	22.5	23.5	24.5	23.0	24.0
9	18.0	16.0	17.5	23.0	20.0	21.5	24.0	21.0	22.5	24.0	23.0	23.5
10	20.0	18.0	19.0	24.0	21.5	22.5	21.0	19.5	20.0	24.0	22.5	23.5
11	20.5	17.5	19.0	22.5	21.5	22.0	21.0	19.5	20.0	25.0	22.0	23.5
12	---	---	19.0	21.5	19.5	20.5	23.5	20.5	22.0	25.5	22.5	23.5
13	---	---	---	19.5	18.0	19.0	25.0	22.0	23.0	25.5	23.0	24.0
14	---	---	---	19.5	17.5	18.5	24.0	22.0	23.0	24.5	22.0	24.0
15	---	---	---	21.0	18.0	19.5	22.0	20.5	21.0	23.0	21.5	22.5
16	---	---	---	20.5	17.5	19.0	20.5	19.5	20.0	23.5	22.5	23.0
17	---	---	---	21.0	19.0	20.0	21.5	20.0	20.5	24.0	22.5	23.5
18	---	---	---	22.0	20.0	21.0	22.0	21.0	21.5	23.0	21.0	22.0
19	---	---	---	20.0	18.0	19.0	23.5	22.0	22.5	23.0	20.0	21.5
20	---	---	---	19.0	17.0	17.5	23.0	20.5	21.5	23.5	20.0	21.5
21	---	---	---	18.5	16.0	17.5	22.5	19.0	21.0	24.0	20.5	22.0
22	---	---	---	19.5	16.5	17.5	22.5	19.5	21.0	25.0	21.5	23.0
23	---	---	---	20.0	17.0	18.5	23.0	20.0	21.5	25.5	23.0	24.0
24	---	---	---	20.5	17.5	19.0	23.5	21.0	22.0	26.0	24.0	24.5
25	---	---	---	20.5	18.0	19.0	23.5	21.0	22.0	25.0	22.5	24.0
26	---	---	---	21.0	19.0	20.0	24.0	22.0	23.0	24.0	22.0	23.0
27	---	---	---	22.0	19.5	20.5	24.0	22.5	23.5	23.0	21.5	22.5
28	---	---	---	22.5	20.5	21.5	25.0	23.0	24.0	24.5	22.5	23.5
29	---	---	---	22.0	20.0	21.0	24.0	23.0	23.5	24.5	23.5	24.0
30	---	---	---	22.5	20.5	21.0	24.5	23.5	23.5	26.0	24.5	25.0
31	---	---	---	22.0	20.5	21.0	---	---	---	25.0	22.0	23.0
MONTH	20.5	11.5	17.5	24.0	16.0	20.0	25.0	19.0	22.0	26.0	20.0	23.0

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	24.0	22.5	23.5				---	---	---	27.5	26.0	27.0
2	24.5	23.5	24.0				---	---	---	27.5	26.5	27.0
3	25.0	23.5	24.0				---	---	---	27.5	26.5	27.0
4	24.0	20.5	22.0				---	---	---	28.0	26.0	27.0
5	25.5	23.0	24.0				---	---	---	28.0	23.5	27.0
6	26.5	24.5	25.0				---	---	---	25.0	24.0	25.0
7	26.0	25.0	25.5				---	---	---	25.0	22.5	23.5
8	25.5	25.0	25.0				---	---	---	24.0	23.5	24.0
9	25.5	25.0	25.5				---	---	---	25.5	24.0	25.0
10	26.0	25.5	26.0				---	---	---	27.0	25.5	26.0
11	26.0	26.0	26.0				---	---	---	28.0	26.0	27.0
12	26.5	25.5	26.0				---	---	---	27.5	26.5	27.0
13	26.0	25.5	25.5				---	---	---	27.5	26.5	27.0
14	---	---	---				---	---	---	27.5	26.5	27.0
15	---	---	---				---	---	---	27.5	26.5	27.0
16	---	---	---				---	---	---	27.5	26.5	26.5
17	---	---	---				---	---	---	27.5	26.5	27.0
18	---	---	---				---	---	---	27.5	26.5	27.0
19	---	---	---				---	---	---	27.0	26.0	26.5
20	---	---	---				---	---	---	27.0	26.0	26.5
21	---	---	---				---	---	---	27.0	26.0	26.5
22	---	---	---				---	---	---	27.5	26.5	27.0
23	---	---	---				---	---	---	27.5	26.0	26.5
24	---	---	---				---	---	---	27.0	26.0	26.5
25	---	---	---				27.5	26.5	27.0	27.5	26.0	26.5
26	---	---	---				27.5	26.0	27.0	27.5	26.0	26.5
27	---	---	---				28.0	26.0	27.0	27.5	26.0	26.5
28	---	---	---				27.5	26.0	26.5	27.5	26.0	26.5
29	---	---	---				27.0	24.5	26.0	27.5	26.0	26.5
30	---	---	---				26.5	24.5	25.5	27.0	26.0	26.5
31	---	---	---				27.5	25.0	26.0	---	---	---
MONTH	26.5	20.5	25.0				28.0	24.5	26.5	28.0	22.5	26.5

08181500 MEDINA RIVER AT SAN ANTONIO, TX

LOCATION.--Lat 29°15'14", long 98°28'20", Bexar County, Hydrologic Unit 12100302, near left bank at downstream side of pier of upstream bridge of two bridges on U.S. Highway 281 in San Antonio and 6.8 mi upstream from mouth.

DRAINAGE AREA.--1,317 mi², of which 634 mi² is above dam forming Medina Lake.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to December 1930, and July 1939 to current year. October 1929 to December 1930, records below about 50 ft³/s in connection with seepage investigation (published as "at Losoya"). Published as "near San Antonio" July 1939 to September 1970.

REVISED RECORDS.--WSP 1562: 1957. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.0 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). October 1929 to December 1930, nonrecording gage at Losoya 1.5 mi downstream at different datum.

REMARKS.--Estimated daily discharges: July 3-17. Records good. Flow is slightly regulated by Medina Lake (station 08179500) 60 mi upstream, and by diversion dam reservoir, capacity 4,500 acre-ft. For diversion of canal records, see Medina Canal near Riomedina (station 08180000). For statement concerning losses into the Edwards and associated limestones formation, see Medina River near Somerset (station 08180800). Several small diversions below diversion dam reservoir. Records furnished by the city of San Antonio show that during the current year 29,120 acre-ft of sewage effluent was discharged from the Leon Creek and 560 acre-ft of sewage effluent was discharged from the Mitchell Lake plant plant into the Medina River above this station. Satellite telemeter at station.

AVERAGE DISCHARGE.--47 years (water years 1940-86), 171 ft³/s (123,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft³/s July 17, 1973 (gage height, 43.59 ft); minimum daily, 3.3 ft³/s Apr. 18, Nov. 1, 1956, and Jan. 24, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 55 ft sometime prior to construction of Medina Dam in 1913, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,900 ft³/s June 4 at 2330 hours (gage height, 31.87 ft); minimum daily, 65 ft³/s Oct. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	150	150	129	110	104	104	98	2970	203	120	161
2	73	246	141	127	110	104	104	95	498	199	119	145
3	69	185	138	127	154	107	104	94	518	190	118	128
4	67	160	136	127	282	107	104	92	5580	189	117	116
5	66	149	133	123	170	109	105	95	9100	188	118	128
6	66	143	132	121	137	108	103	94	1600	188	120	300
7	65	141	131	103	128	114	102	87	738	174	117	573
8	66	139	131	91	123	108	97	93	669	178	117	427
9	66	133	131	98	119	106	77	94	707	171	117	187
10	66	136	132	102	117	108	73	125	485	162	115	150
11	66	138	132	96	115	108	71	113	384	154	118	133
12	66	139	134	93	114	114	71	99	346	147	117	125
13	66	140	134	88	113	108	75	97	334	138	115	126
14	66	136	133	86	114	109	74	99	305	140	114	119
15	155	132	132	85	113	111	72	181	283	147	115	114
16	91	132	131	89	112	109	71	125	261	143	115	113
17	76	131	130	126	111	110	70	123	290	143	116	111
18	72	133	130	151	110	110	71	111	1180	142	115	108
19	181	132	129	128	109	105	75	101	2080	140	116	108
20	1080	142	130	121	114	104	75	97	613	135	114	108
21	825	129	130	119	110	105	81	93	384	136	112	105
22	444	128	128	117	105	102	86	89	328	136	113	128
23	296	128	127	113	106	102	85	89	291	136	112	120
24	236	152	129	113	107	104	85	85	278	135	119	111
25	207	183	128	113	107	104	85	98	265	132	116	106
26	190	148	129	112	105	104	88	150	244	131	125	104
27	174	197	131	111	104	105	88	317	239	128	116	101
28	162	235	130	110	104	102	85	247	223	128	110	101
29	152	189	126	112	---	99	86	171	213	127	117	106
30	148	162	133	110	---	97	95	126	208	125	112	107
31	145	---	135	109	---	103	---	758	---	122	106	---
TOTAL	5587	4593	4096	3450	3423	3290	2562	4336	31614	4707	3591	4569
MEAN	180	153	132	111	122	106	85.4	140	1054	152	116	152
MAX	1080	246	150	151	282	114	105	758	9100	203	125	573
MIN	65	128	126	85	104	97	70	85	208	122	106	101
AC-FT	11080	9110	8120	6840	6790	6530	5080	8600	62710	9340	7120	9060

CAL YR 1985 TOTAL 47757 MEAN 131 MAX 1660 MIN 63 AC-FT 94730
WTR YR 1986 TOTAL 75818 MEAN 208 MAX 9100 MIN 65 AC-FT 150400

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08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: June 1965 to current year. Pesticide analyses: April 1971 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN												
14...	1030	80	805	7.95	9.0	5	2.5	10.2	--	1.4	--	--
JUN												
04...	1626	8070	191	8.00	20.5	50	450	6.2	71	6.1	--	--
05...	1100	8670	304	7.30	25.0	55	450	6.8	81	7.0	K2000	K24000
JUL												
28...	1425	117	830	7.70	29.0	5	13	4.4	--	>8.2	--	--
AUG												
27...	1345	102	792	7.70	27.5	10	20	4.0	--	18	--	--

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
JAN												
14...	310	63	91	21	47	1	3.2	251	98	63	0.3	8.1
JUN												
04...	74	9	25	2.7	7.1	0.4	4.9	65	20	7.4	0.1	8.8
05...	110	17	35	4.9	13	0.6	8.0	91	30	17	0.1	12
JUL												
28...	290	90	85	20	48	1	4.1	205	88	65	0.3	13
AUG												
27...	290	73	85	19	53	1	4.6	218	79	69	0.4	14

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
JAN												
14...	480	3	--	3.06	0.04	3.10	0.07	0.63	0.7	0.25	--	<1
JUN												
04...	120	1170	150	0.46	0.04	0.50	0.35	1.4	1.8	0.93	25	2
05...	170	1130	169	1.39	0.11	1.50	0.33	2.8	3.1	1.20	28	--
JUL												
28...	450	12	2	3.62	0.88	4.50	1.90	0.7	2.6	1.50	6.4	--
AUG												
27...	450	28	9	3.04	0.96	4.00	1.70	1.1	2.8	0.04	4.9	2

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN											
14...	67	1	<10	<1	39	<1	7	0.6	<1	<1	25
JUN											
04...	31	<1	<10	2	43	<5	2	<0.1	<1	<1	16
05...	--	--	--	--	--	--	--	--	--	--	--
JUL											
28...	--	--	--	--	--	--	--	--	--	--	--
AUG											
27...	54	1	<10	4	11	24	9	0.1	1	<1	27

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08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX

LOCATION.--Lat 29°13'19", long 98°21'20", Bexar County, Hydrologic Unit 12100301, at downstream side of bridge on Farm Road 1604, 2.7 mi southwest of Elmendorf, 3.3 mi downstream from Braunig Plant Lake, and 203.0 mi upstream from mouth

DRAINAGE AREA.--1,743 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 385 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 19, 1980, at site 2.5 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow slightly regulated by Medina Lake (station 08179500) and by Olmos flood-control reservoir (combined capacity, 269,500 acre-ft). Storage began in Medina Lake in 1913, and Olmos Dam was completed in 1926. Water is diverted above station from Medina River for irrigation in the vicinity of Devine and Lytle, with some water diverted for irrigation near San Antonio. During the current year, the city of San Antonio discharged 141,700 acre-ft of sewage effluent into the San Antonio River from the Rilling Road, Leon Creek, Salado Creek, and Mitchell Lake plants upstream from this station. The San Antonio City Public Service Board pumped 6,090 acre-ft into Braunig Lake, released 136 acre-ft from Braunig Lake, and pumped 17,670 acre-ft into Calaveras Lake, upstream from this station. For additional information relative to sewage effluent, see station 08181500. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08178700. Satellite telemeter at station.

AVERAGE DISCHARGE.--24 years, 507 ft^3/s (367,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft^3/s Sept. 27, 1973 (gage height, 47.60 ft), site and datum then in use; maximum gage height, 53.06 ft June 5, 1986; minimum discharge, 12 ft^3/s Aug. 24-26, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 61 ft in 1946. Second highest stage was 53 ft in 1913, from information by local residents. At site and datum in use prior to Dec. 19, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 5	0400	*35,900	*53.06	June 19	0200	8,610	37.35

Minimum daily discharge, 152 ft^3/s July 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	531	341	448	341	348	238	247	433	4970	472	159	688
2	320	1780	430	373	326	238	242	322	1550	473	162	451
3	292	841	411	350	714	248	244	238	1440	455	154	306
4	249	463	394	345	2030	249	242	221	12600	431	160	253
5	227	388	394	331	604	246	255	223	26100	408	215	398
6	220	331	394	370	381	237	235	232	4870	396	181	1310
7	227	321	380	337	315	244	270	216	1980	398	186	2980
8	226	315	377	440	288	240	309	204	1980	419	182	2200
9	229	307	385	493	279	244	289	233	1670	402	178	663
10	232	306	387	417	285	250	252	480	1110	390	172	540
11	231	316	411	343	280	264	249	446	831	381	183	480
12	217	315	370	324	269	342	236	286	849	364	191	464
13	216	317	381	314	266	263	245	235	929	355	191	454
14	226	315	369	302	259	247	252	236	721	366	184	448
15	2120	314	366	309	258	298	254	1110	637	378	185	434
16	729	328	377	294	263	268	250	461	574	370	175	399
17	383	297	370	378	265	252	242	346	658	350	183	366
18	309	330	364	397	271	254	245	337	3900	341	171	362
19	1330	366	363	364	263	246	243	315	6240	330	188	350
20	3530	394	361	350	280	255	250	299	2220	313	190	417
21	2360	353	352	348	260	252	252	254	963	313	210	443
22	1510	342	353	336	242	219	270	220	796	316	194	397
23	683	338	355	329	247	227	263	218	703	307	200	396
24	548	934	358	332	256	230	267	203	683	286	196	366
25	479	1640	346	325	241	243	264	464	822	231	211	392
26	434	974	346	329	241	245	266	1090	616	228	237	417
27	405	1610	342	330	258	246	261	1610	586	263	204	402
28	397	1590	349	328	263	241	269	1370	546	263	225	419
29	371	574	341	328	---	235	269	491	512	178	328	474
30	374	479	347	328	---	229	338	385	505	173	247	443
31	371	---	357	325	---	228	---	2310	---	152	225	---
TOTAL	19976	17519	11578	10813	10252	7718	7770	15488	82561	10502	6067	18112
MEAN	644	584	373	349	366	249	259	500	2752	339	196	604
MAX	3530	1780	448	493	2030	342	338	2310	26100	473	328	2980
MIN	216	297	341	294	241	219	235	203	505	152	154	253
AC-FT	39620	34750	22960	21450	20330	15310	15410	30720	163800	20830	12030	35930

CAL YR 1985 TOTAL 169099 MEAN 463 MAX 5000 MIN 185 AC-FT 335400
WTR YR 1986 TOTAL 218356 MEAN 598 MAX 26100 MIN 152 AC-FT 433100

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1964 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: January 1968 to September 1981.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
pH: June 1984 to September 1984.
WATER TEMPERATURES: October 1966 to current year.
DISSOLVED OXYGEN: June 1984 to September 1984.

INSTRUMENTATION.--Beginning June 1984, a four-parameter water-quality monitor records temperature, DO, pH, and specific conductance.

REMARKS.--Interruptions in the record were due to malfunctions of the instruments. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,240 microsiemens Jan. 29, 1973, Aug. 8, 1975; minimum daily, 253 microsiemens Oct. 7, 1981.
pH: Maximum, 8.0 units Sept. 7, 27, 1985; minimum, 7.3 units Aug. 13-17, 1984.
WATER TEMPERATURES: Maximum daily, 32.0°C on several days during summer months; minimum daily, 5.5°C Jan. 10, 1973.
DISSOLVED OXYGEN: Maximum, 8.9 mg/L July 23, 1984; minimum, 0.0 mg/L Mar. 2, Apr. 14, 15, 1985.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,010 microsiemens Apr. 25; minimum, 370 microsiemens June 4.
WATER TEMPERATURE: Minimum, 11.5°C Jan. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3
NOV 01...	1346	277	906	7.70	21.0	20	10	4.8	56	21	290	34
DEC 09...	1300	359	892	7.80	19.0	7	9.3	5.6	61	22	300	35
MAR 07...	1155	242	990	7.70	18.5	20	7.9	5.2	57	34	300	36
MAY 05...	1322	224	918	7.70	24.5	10	10	3.7	46	20	280	16
JUN 27...	1155	587	902	7.70	28.0	10	35	3.8	--	23	310	60
AUG 20...	1335	197	941	7.60	29.0	10	1.0	1.8	--	15	270	44

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV 01...	87	17	71	2	7.2	253	75	83	0.6	16	510
DEC 09...	89	18	69	2	4.9	261	80	78	0.5	16	510
MAR 07...	89	20	79	2	7.6	269	84	100	0.6	14	560
MAY 05...	82	18	68	2	6.2	263	77	88	0.4	16	510
JUN 27...	94	19	64	2	5.9	253	90	79	0.4	16	520
AUG 20...	78	19	71	2	6.3	229	77	95	0.4	15	500

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
NOV 01...	19	7	2.60	1.70	4.30	4.10	1.4	5.5	1.70	7.2	1
DEC 09...	15	8	3.60	1.50	5.10	4.50	5.5	10	1.30	6.8	--
MAR 07...	27	13	1.73	0.97	2.70	7.20	1.7	8.9	3.30	9.4	2
MAY 05...	25	8	2.10	0.90	3.00	7.50	1.0	8.5	2.10	9.0	--
JUN 27...	66	21	1.90	1.10	3.00	3.20	1.0	4.2	1.10	6.6	--
AUG 20...	2	1	2.00	1.00	3.00	5.80	0.7	6.5	2.80	6.8	--

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV											
01...	71	<1	<10	4	32	2	22	<0.1	<1	<1	64
DEC											
09...	--	--	--	--	--	--	--	--	--	--	--
MAR											
07...	56	<1	<10	3	48	1	34	<0.1	<1	<1	21
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
27...	--	--	--	--	--	--	--	--	--	--	--
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	19976	625	356	19200	48	2610	59	3160	230
NOV. 1985	17519	655	373	17600	52	2450	61	2870	240
DEC. 1985	11578	839	474	14800	75	2350	72	2260	280
JAN. 1986	10813	856	483	14100	78	2270	73	2140	280
FEB. 1986	10252	808	456	12600	72	1990	70	1940	270
MAR. 1986	7718	906	510	10600	85	1780	76	1580	290
APR. 1986	7770	947	532	11200	92	1930	78	1630	300
MAY 1986	15488	762	432	18100	66	2740	67	2820	260
JUNE 1986	82561	569	325	72500	42	9300	55	12200	220
JULY 1986	10502	946	532	15100	92	2600	78	2200	300
AUG. 1986	6067	930	523	8560	89	1460	77	1260	290
SEPT 1986	18112	650	370	18100	51	2490	61	2960	240
TOTAL	218356	**	**	232000	**	34000	**	37000	**
WTD.AVG.	598	695	394	**	58	**	63	**	250

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	690	590	643	890	830	874	---	---	728	850	830	843
2	910	700	769	840	410	538	---	---	746	850	790	824
3	---	---	780	550	440	493	---	---	774	830	780	800
4	---	---	810	670	550	620	---	---	820	860	840	846
5	---	---	822	740	670	700	---	---	880	860	840	854
6	---	---	850	750	720	737	---	---	900	900	820	858
7	---	---	875	770	750	753	930	910	917	920	880	892
8	---	---	887	780	750	767	910	890	898	930	760	893
9	---	---	998	780	770	774	890	860	868	760	710	734
10	---	---	905	820	780	800	880	850	867	790	720	763
11	920	900	905	820	780	804	880	840	857	830	780	801
12	930	890	907	810	770	792	860	840	850	850	820	835
13	920	880	903	820	800	809	860	840	850	850	830	837
14	900	860	886	820	800	813	860	820	838	870	830	848
15	870	490	610	820	790	805	840	820	828	890	870	874
16	590	510	554	810	780	789	840	800	815	890	870	876
17	670	590	629	780	750	760	830	800	813	890	880	886
18	720	670	703	890	760	816	840	810	825	870	840	848
19	750	480	692	910	870	885	930	820	867	870	850	859
20	470	430	452	920	850	896	930	890	910	870	830	845
21	530	450	488	870	840	856	920	880	896	890	840	859
22	550	510	529	880	860	868	890	860	873	960	880	906
23	640	550	598	880	860	874	870	830	840	950	910	923
24	680	630	655	890	580	746	860	830	838	930	910	915
25	760	660	706	570	490	517	860	830	842	920	890	897
26	740	690	714	590	480	526	850	800	817	910	880	894
27	740	720	726	630	480	567	810	780	795	890	850	866
28	740	710	721	540	460	495	840	820	825	900	860	874
29	780	720	743	650	540	614	840	810	826	910	880	891
30	750	720	738	720	640	690	830	800	811	900	870	883
31	890	730	788	---	---	---	840	790	812	900	880	891
MONTH	930	430	741	920	410	733	930	780	840	960	710	859

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	900	870	890	910	890	903	880	860	864	900	810	858
2	900	860	883	920	910	913	940	900	918	890	800	839
3	900	610	855	920	900	910	950	920	933	920	880	900
4	610	530	567	930	890	906	960	930	945	930	910	922
5	710	570	653	940	920	928	960	940	954	930	870	905
6	800	700	747	950	920	933	940	920	935	900	870	877
7	910	790	837	970	930	945	940	910	924	910	900	908
8	900	880	885	960	930	945	930	910	914	970	920	950
9	890	800	868	940	910	928	960	920	935	980	930	957
10	920	780	838	940	910	924	950	910	933	980	780	885
11	920	860	887	920	890	902	960	930	944	880	790	833
12	920	880	908	960	870	910	970	950	960	880	850	866
13	920	870	904	930	870	903	990	960	978	900	860	875
14	960	900	923	940	910	927	980	910	944	920	900	916
15	970	860	901	940	910	925	950	900	915	910	690	762
16	960	810	895	930	870	882	980	920	944	800	730	755
17	940	810	897	880	850	863	950	930	939	860	800	831
18	940	840	906	890	860	872	960	940	953	890	860	876
19	950	750	868	910	890	900	1000	960	976	890	860	875
20	950	830	883	920	890	905	1000	980	994	920	880	891
21	950	770	911	910	880	897	990	960	975	940	910	925
22	960	920	935	910	890	903	980	950	963	940	920	930
23	950	910	926	910	880	896	990	970	982	940	910	928
24	930	480	891	890	860	876	1000	950	977	950	920	937
25	940	890	909	910	850	870	1010	960	985	950	850	911
26	960	930	941	940	910	925	980	950	964	860	610	799
27	950	910	923	940	890	910	990	950	965	610	540	582
28	940	880	913	940	900	913	970	920	944	560	530	548
29	---	---	---	930	900	910	930	910	923	720	560	648
30	---	---	---	920	880	897	960	880	941	770	710	743
31	---	---	---	890	860	873	---	---	---	780	520	661
MONTH	970	480	869	970	850	906	1010	860	947	980	520	842

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	530	450	493			915			993			741
2	620	470	565			917			987			739
3	700	570	627			924			990			771
4	620	370	483			926			992			830
5	520	390	455			930			940			812
6	630	530	580			930			963			693
7	700	640	681			938			960			470
8	690	660	675			923			965			491
9	690	660	676			918			967			583
10	720	680	700			927			981			655
11	770	730	752			934			975			706
12	780	750	768			931			970			714
13	770	750	757			938			976			718
14	790	760	770			940			978			721
15	790	780	786			947			983			728
16	790	770	782			949			987			733
17	800	760	773			958			974			738
18	800	650	762			961			978			745
19	640	620	625			965			963			758
20	620	590	600			974			941			744
21	620	590	605			968			935			701
22	670	620	642			971			945			718
23	720	660	690			970			938			722
24	---	---	730			974			928			743
25	---	---	790			978			910			731
26	---	---	856			975			890			713
27	---	---	902			979			912			726
28	---	---	908			970			895			737
29	---	---	911			990			745			712
30	---	---	913			990			778			721
31	---	---	---			998			786			
MONTH	800	370	709			952			940			710

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.5	21.0	21.5	22.0	20.5	21.0	20.5	19.0	20.0	17.0	16.0	16.5
2	23.0	21.5	22.0	21.5	17.0	18.0	18.5	16.5	17.0	17.0	15.5	16.5
3	24.5	22.5	23.5	18.5	17.0	17.5	16.0	15.5	16.0	17.5	16.0	16.5
4	25.0	23.0	24.0	19.5	18.0	19.0	18.0	16.0	17.0	18.5	17.0	18.0
5	24.5	23.0	24.0	20.0	19.0	19.5	18.0	17.5	17.5	17.5	15.5	16.5
6	23.5	22.0	23.0	20.5	19.0	20.0	17.5	16.5	17.0	16.0	14.5	15.5
7	24.5	22.0	23.5	21.0	20.0	20.5	18.0	16.5	17.5	16.0	15.0	15.5
8	25.5	23.5	24.5	21.5	20.0	21.0	18.5	17.0	18.0	15.0	12.5	14.5
9	26.0	25.0	25.5	23.0	21.5	22.0	20.5	18.5	19.5	12.5	12.0	12.0
10	27.0	25.5	26.5	24.0	23.0	23.5	21.5	20.5	21.0	13.0	11.5	12.5
11	27.5	26.5	27.0	24.0	23.5	24.0	21.5	18.0	20.0	14.0	12.5	13.0
12	28.0	26.5	27.0	24.0	23.5	24.0	18.0	16.0	16.5	15.0	13.5	14.0
13	28.0	26.5	27.5	25.0	24.0	24.5	16.0	15.0	15.5	15.5	14.0	14.5
14	28.0	27.0	27.5	25.0	24.0	24.5	15.0	14.0	14.0	15.5	14.0	15.0
15	28.0	23.0	24.5	25.0	23.5	24.5	14.5	13.5	14.0	16.5	14.5	15.5
16	24.0	23.5	23.5	23.0	21.0	22.0	15.5	14.0	14.5	17.5	16.0	16.5
17	25.5	23.5	24.5	21.5	20.5	21.0	16.5	15.5	16.0	18.5	17.0	17.5
18	26.5	25.0	26.0	23.5	21.5	22.5	17.0	16.0	16.5	18.5	18.0	18.0
19	26.5	23.0	25.5	24.0	23.0	23.5	16.5	15.5	16.0	18.5	17.5	18.0
20	23.0	22.0	22.5	23.0	19.5	21.0	16.0	15.0	15.5	18.5	17.0	18.0
21	23.0	21.5	22.0	19.5	18.5	19.0	16.5	15.5	16.0	20.0	18.0	19.0
22	23.0	22.5	22.5	20.5	19.0	19.5	18.0	16.5	17.0	19.5	18.0	19.0
23	24.0	23.0	23.5	22.0	20.5	21.0	18.0	17.0	17.5	18.0	17.0	18.0
24	25.5	24.0	24.5	23.5	21.0	22.0	17.5	16.5	17.0	19.0	18.0	18.5
25	25.5	24.5	25.0	22.5	21.5	22.0	16.5	14.5	15.5	19.0	18.5	18.5
26	25.5	25.0	25.0	23.0	22.5	22.5	15.0	13.5	14.0	18.5	17.0	17.5
27	24.5	24.0	24.0	23.0	20.0	21.5	16.5	15.0	15.5	17.0	15.5	16.0
28	24.0	22.5	23.0	20.0	19.0	19.5	17.0	16.5	16.5	17.0	15.0	16.0
29	23.0	22.0	22.5	19.0	18.5	19.0	17.5	16.0	16.5	18.0	16.0	17.0
30	22.5	21.5	22.0	20.5	18.5	19.5	17.5	16.5	17.0	18.5	17.0	18.0
31	22.0	20.5	21.5	---	---	---	17.5	16.5	17.0	20.0	18.0	19.0
MONTH	28.0	20.5	24.0	25.0	17.0	21.5	21.5	13.5	16.5	20.0	11.5	16.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	21.0	19.5	20.0	19.0	17.5	18.5	23.5	22.5	23.0	26.0	25.0	25.5
2	21.0	20.0	20.5	20.5	18.0	19.0	24.5	22.0	23.5	25.5	24.5	25.0
3	21.5	19.0	21.0	21.5	19.5	20.5	24.0	23.0	23.5	24.5	23.5	24.0
4	19.5	19.0	19.0	21.5	19.5	20.5	24.5	23.0	24.0	25.0	23.5	24.0
5	20.0	19.0	19.5	21.0	19.0	20.0	25.0	24.0	24.5	25.5	24.0	25.0
6	19.0	18.5	19.0	21.0	19.0	20.0	24.5	24.5	24.5	26.5	24.5	25.5
7	19.0	18.0	18.5	20.5	18.5	19.5	25.0	24.0	24.5	26.0	25.5	25.5
8	18.5	16.5	17.5	21.5	19.5	20.5	27.0	24.5	25.5	26.5	25.0	25.5
9	16.0	15.0	15.5	23.0	21.0	22.0	26.5	23.5	24.5	26.0	25.5	26.0
10	15.5	14.5	15.0	24.5	22.0	23.5	23.5	21.5	22.0	25.5	24.5	25.0
11	15.0	14.0	14.5	24.0	23.0	23.5	23.0	21.0	22.0	26.5	23.5	25.0
12	14.5	13.5	14.0	23.0	21.5	22.5	25.5	22.5	24.0	27.5	25.0	26.5
13	15.0	14.0	14.5	21.5	20.0	20.5	27.0	24.0	25.5	27.5	26.0	27.0
14	18.0	15.0	16.5	21.0	19.0	20.0	26.0	24.5	25.5	27.0	25.5	26.5
15	18.5	17.0	18.0	22.0	19.5	21.0	24.5	23.0	23.5	25.5	23.0	24.0
16	20.5	18.0	19.0	22.0	19.5	21.0	23.5	22.0	23.0	25.0	23.5	24.0
17	21.0	19.5	20.5	22.0	20.0	21.5	23.0	22.0	22.5	26.0	24.5	25.5
18	21.0	19.5	20.5	23.5	21.5	22.5	23.5	22.5	23.0	25.5	24.0	25.0
19	22.0	19.5	21.0	22.0	20.0	21.0	25.0	23.5	24.0	26.0	23.0	24.5
20	22.0	20.5	21.5	20.5	19.0	20.0	25.0	23.5	24.5	26.5	23.5	25.0
21	21.5	18.5	20.0	20.5	18.5	19.5	25.5	22.0	24.0	27.0	24.0	25.5
22	18.5	17.5	18.0	21.0	18.5	20.0	25.0	22.5	24.0	28.0	24.5	26.5
23	19.0	17.0	18.0	21.5	19.0	20.5	25.5	22.5	24.0	28.0	26.0	27.0
24	19.5	17.5	18.5	21.5	19.5	21.0	26.0	23.5	24.5	28.5	26.0	27.5
25	20.5	18.0	19.5	22.0	20.0	21.0	26.0	23.5	25.0	28.0	25.5	27.0
26	21.5	---	---	22.5	20.5	21.5	26.5	24.5	25.5	26.5	23.5	25.0
27	21.0	19.5	20.5	23.5	21.0	22.0	26.5	25.0	25.5	24.5	23.5	24.0
28	20.5	19.0	19.5	24.0	21.5	23.0	27.0	25.0	26.0	25.0	23.0	24.0
29	---	---	---	24.0	21.5	23.0	26.5	25.5	26.0	27.0	24.5	25.5
30	---	---	---	24.0	22.0	23.0	26.5	25.0	25.5	26.5	26.0	26.0
31	---	---	---	23.5	22.0	23.0	---	---	---	27.0	24.0	25.0
MONTH	22.0	13.5	18.5	24.5	17.5	21.0	27.0	21.0	24.0	28.5	23.0	25.5

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	24.5	23.5	24.0	28.5	27.0	27.5						
2	25.5	24.5	25.0	---	---	---						
3	26.0	25.0	25.5	---	---	---						
4	26.5	20.5	23.0	---	---	---						
5	23.5	21.5	22.5	---	---	---						
6	25.5	23.5	24.5	---	---	---						
7	26.0	25.0	25.0	---	---	---						
8	26.5	24.5	25.5	---	---	---						
9	26.5	25.5	26.0	---	---	---						
10	27.5	26.0	26.5	---	---	---						
11	27.0	26.5	27.0	---	---	---						
12	27.0	26.0	26.5	---	---	---						
13	27.0	25.5	26.5	---	---	---						
14	27.5	26.0	27.0	---	---	---						
15	27.5	26.5	27.0	---	---	---						
16	28.0	27.0	27.5	---	---	---						
17	28.0	27.0	27.0	---	---	---						
18	26.5	23.5	24.5	---	---	---						
19	25.5	23.5	24.0	---	---	---						
20	26.0	25.0	25.5	---	---	---						
21	27.0	25.5	26.0	---	---	---						
22	27.5	26.0	26.5	---	---	---						
23	27.5	26.0	27.0	---	---	---						
24	27.0	26.5	26.5	---	---	---						
25	27.5	25.5	26.5	---	---	---						
26	28.0	26.5	27.0	---	---	---						
27	28.5	27.0	27.5	---	---	---						
28	28.5	27.0	28.0	---	---	---						
29	28.5	27.0	28.0	---	---	---						
30	28.5	27.0	28.0	---	---	---						
31	---	---	---	---	---	---						
MONTH	28.5	20.5	26.0	28.5	27.0	27.5						

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.2	5.3	5.8	5.1	4.4	4.7	5.6	5.0	5.4	4.2	3.5	3.9
2	5.9	5.3	5.6	7.2	4.1	6.5	6.4	5.7	6.1	4.4	3.8	4.1
3	5.5	4.9	5.3	6.8	5.9	6.2	6.5	6.3	6.5	4.3	2.6	3.5
4	4.9	2.1	4.4	6.3	5.6	6.0	6.3	5.5	6.0	3.6	3.3	3.5
5	4.2	2.7	3.9	5.7	5.2	5.5	5.6	5.1	5.4	4.2	3.3	3.9
6	4.2	3.9	4.0	5.3	4.9	5.1	5.3	5.1	5.2	5.6	4.1	4.8
7	4.1	3.8	4.0	4.9	4.5	4.8	6.0	5.5	5.9	5.4	5.2	5.3
8	3.7	3.2	3.4	4.5	4.0	4.3	5.7	5.2	5.5	7.3	5.3	5.9
9	3.4	3.2	3.3	4.0	3.6	3.8	5.4	4.8	5.2	7.6	7.2	7.5
10	3.4	3.1	3.2	3.7	3.3	3.5	4.8	4.2	4.5	7.6	6.9	7.3
11	3.9	2.8	3.1	3.5	3.3	3.3	5.0	4.2	4.6	6.9	6.2	6.6
12	3.5	2.8	3.2	3.4	3.1	3.3	5.4	4.8	5.3	6.3	5.9	6.2
13	3.6	3.2	3.4	3.5	2.9	3.2	5.8	5.3	5.7	5.8	5.4	5.6
14	3.6	3.0	3.3	3.3	3.0	3.2	6.2	5.7	6.0	5.4	5.1	5.3
15	5.0	.9	4.1	3.0	2.6	2.8	6.3	5.9	6.1	5.1	4.7	5.0
16	5.2	5.0	5.1	3.4	2.8	3.2	6.0	5.1	5.7	4.6	4.1	4.3
17	5.1	4.0	4.6	3.5	3.2	3.3	5.1	4.5	4.8	4.3	3.5	4.0
18	3.9	2.9	3.4	4.2	3.1	3.5	4.6	4.3	4.5	3.9	3.4	3.7
19	5.2	2.6	3.6	3.8	3.6	3.7	6.1	4.3	5.2	3.7	3.3	3.6
20	5.8	4.9	5.4	4.5	3.6	4.0	6.1	5.8	6.0	3.8	3.3	3.6
21	6.6	5.6	6.1	4.7	4.5	4.6	6.0	5.6	5.8	3.4	2.7	3.1
22	6.3	5.8	6.0	4.4	3.9	4.2	5.5	5.1	5.4	4.7	2.6	3.6
23	5.9	5.1	5.4	3.8	3.3	3.6	5.3	5.0	5.2	4.9	4.6	4.8
24	5.2	4.6	4.9	4.4	2.7	3.7	5.4	4.8	5.1	4.7	4.5	4.6
25	4.9	4.4	4.6	5.2	4.3	4.6	5.8	5.1	5.5	4.6	4.4	4.5
26	4.5	4.2	4.4	4.9	3.2	4.1	6.3	5.5	5.9	5.0	4.4	4.8
27	4.3	3.7	4.2	---	---	---	5.9	4.8	5.5	5.3	4.8	5.1
28	5.0	4.1	4.7	---	---	---	4.9	4.5	4.7	5.3	4.7	5.1
29	4.9	4.6	4.8	6.1	5.9	6.0	4.7	4.3	4.6	4.8	4.4	4.7
30	4.7	4.4	4.6	6.1	5.2	5.7	4.2	3.0	3.9	4.6	4.1	4.4
31	4.8	4.3	4.6	---	---	---	4.2	3.8	4.0	4.1	3.4	3.8
MONTH	6.6	.9	4.4	7.2	2.6	4.3	6.5	3.0	5.3	7.6	2.6	4.7

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3.4	2.9	3.2	4.4	4.0	4.3	4.3	3.6	3.9	2.9	1.9	2.5
2	3.1	2.2	2.6	4.0	3.2	3.7	4.4	3.1	3.7	2.6	2.2	2.4
3	---	---	---	3.5	3.2	3.4	2.9	2.5	2.7	2.5	2.3	2.3
4	6.5	4.0	5.5	3.8	3.3	3.6	2.8	2.1	2.4	2.7	2.4	2.5
5	6.2	5.3	5.8	3.5	3.0	3.3	2.5	1.8	2.2	3.6	2.6	2.8
6	6.4	5.9	6.2	3.0	2.4	2.8	2.2	1.9	2.1	3.6	3.0	3.3
7	6.6	5.9	6.2	3.1	2.4	2.8	2.5	1.9	2.2	3.2	3.1	3.1
8	6.8	6.5	6.6	2.8	2.5	2.7	2.4	1.7	2.1	4.0	3.4	3.6
9	7.3	6.8	7.1	2.5	2.1	2.3	3.1	1.3	3.0	3.9	2.3	3.2
10	7.4	7.1	7.3	2.8	1.8	2.4	3.4	2.9	3.2	4.5	2.3	3.3
11	7.4	7.1	7.2	3.0	2.7	2.9	3.5	3.1	3.3	5.5	4.7	5.2
12	7.4	7.1	7.3	4.7	3.5	4.0	3.2	2.7	2.9	5.3	5.1	5.2
13	7.1	6.7	6.9	4.5	4.1	4.4	3.0	2.2	2.6	5.4	4.2	4.9
14	6.7	5.8	6.3	4.5	4.0	4.2	3.2	2.3	2.8	5.9	5.2	5.4
15	5.8	5.4	5.6	4.0	2.4	3.5	3.7	2.8	3.2	6.0	3.3	5.4
16	5.4	4.3	4.9	4.1	3.4	3.9	3.6	2.6	3.1	6.6	5.7	6.2
17	4.2	3.6	3.9	4.3	3.5	3.9	3.1	2.6	2.9	6.3	5.3	5.7
18	3.7	1.1	2.2	4.4	3.8	4.0	2.8	2.4	2.6	6.1	5.3	5.5
19	2.4	1.3	2.1	4.9	3.7	4.3	2.7	2.2	2.4	5.8	5.3	5.4
20	2.4	2.0	2.2	5.1	4.3	4.6	3.0	2.3	2.7	5.9	4.0	5.1
21	4.8	1.9	3.4	5.4	4.3	4.8	3.2	2.6	2.9	3.9	3.7	3.8
22	5.2	4.8	5.0	5.0	4.1	4.5	3.4	2.7	3.0	3.8	3.5	3.6
23	5.4	5.0	5.2	5.1	3.9	4.5	3.4	2.6	2.9	3.5	3.3	3.3
24	5.3	5.0	5.1	5.2	3.9	4.5	3.4	2.3	2.8	3.3	2.9	3.1
25	5.0	4.5	4.8	6.2	4.1	4.8	3.3	2.3	2.7	---	---	---
26	4.6	3.7	4.1	5.5	4.6	5.0	3.0	2.3	2.6	---	---	---
27	4.2	3.7	4.0	5.4	4.4	4.7	2.6	1.0	1.9	---	---	---
28	4.4	2.6	4.0	5.5	4.0	4.6	2.8	2.0	2.4	---	---	---
29	---	---	---	5.5	3.8	4.5	2.9	2.3	2.6	---	---	---
30	---	---	---	5.1	3.7	4.3	2.8	1.6	2.6	---	---	---
31	---	---	---	4.9	3.7	4.2	---	---	---	---	---	---
MONTH	7.4	1.1	5.0	6.2	1.8	3.9	4.4	1.0	2.8	6.6	1.9	4.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	3.0	2.6	2.8						
2	---	---	---	---	---	---						
3	---	---	---	---	---	---						
4	---	---	---	---	---	---						
5	---	---	---	---	---	---						
6	---	---	---	---	---	---						
7	---	---	---	---	---	---						
8	---	---	---	---	---	---						
9	---	---	---	---	---	---						
10	---	---	---	---	---	---						
11	---	---	---	---	---	---						
12	---	---	---	---	---	---						
13	---	---	---	---	---	---						
14	---	---	---	---	---	---						
15	---	---	---	---	---	---						
16	---	---	---	---	---	---						
17	---	---	---	---	---	---						
18	5.5	---	---	---	---	---						
19	5.9	5.2	5.5	---	---	---						
20	5.7	4.9	5.4	---	---	---						
21	4.7	2.0	4.0	---	---	---						
22	4.3	3.8	4.1	---	---	---						
23	4.4	3.8	4.1	---	---	---						
24	4.3	.3	3.3	---	---	---						
25	3.9	2.7	3.4	---	---	---						
26	4.0	3.4	3.7	---	---	---						
27	3.6	3.0	3.4	---	---	---						
28	3.4	3.0	3.2	---	---	---						
29	3.2	2.9	3.0	---	---	---						
30	3.0	2.7	2.9	---	---	---						
31	---	---	---	---	---	---						
MONTH	5.9	.3	3.8	3.0	2.6	2.8						

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX

LOCATION.--Lat 28°57'05", long 98°03'50", Karnes County, Hydrologic Unit 12100303, on left bank 23 ft downstream from bridge on Farm Road 791, 0.9 mi upstream from Scared Dog Creek, 3.6 mi southwest of Fall City, and 150.5 mi upstream from mouth.

DRAINAGE AREA.--2,113 mi^2.

PERIOD OF RECORD.--April 1925 to current year.
Water-quality records: Chemical and biochemical analyses: January 1968 to September 1981. Sediment analyses: January 1966 to September 1975.

REVISED RECORDS.--WSP 1732: 1947(M). WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 285.49 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: May 30 to June 5. Records fair. For diversions and regulation above station, see REMARKS for Salado Creek (upper station) at San Antonio (station 08178700), Medina River at San Antonio (station 08181500), and San Antonio River near Elmendorf (station 08181800). Flow is slightly regulated by Calaveras Lake on Calaveras Creek, which enters the San Antonio River downstream from the station near Elmendorf. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures with a combined detention capacity of 26,130 acre-ft. These structures control runoff from 73.8 mi^2. Records provided by San Antonio City Public Service Board show that during the current year 1,930 acre-ft was released into Calaveras Creek from Calaveras Lake. Satellite telemeter at station.

AVERAGE DISCHARGE.--61 years (water years 1926-86), 406 ft^3/s (294,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,400 ft^3/s Sept. 29, 1946 (gage height, 33.80 ft, from floodmark); minimum daily, 19 ft^3/s June 27, 1956.
Maximum stage since at least 1875, that of Sept. 29, 1946.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1913 reached a stage of 28.4 ft, from floodmark, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 6	2400	*14,300	*19.75	June 20	2200	5,540	9.23

Minimum daily discharge, 190 ft^3/s Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2180	380	550	385	350	265	245	400	3700	560	190	270
2	1020	2200	500	395	350	270	245	345	3400	540	200	500
3	320	1200	470	390	600	265	245	265	2900	520	210	400
4	310	850	450	370	900	265	250	240	2000	510	230	360
5	260	500	440	385	1500	260	250	250	7000	480	220	400
6	240	400	430	380	490	260	255	235	6900	470	215	500
7	240	350	430	370	395	260	260	220	12200	460	210	920
8	250	340	420	410	330	260	270	215	10000	470	200	2500
9	250	340	420	470	310	265	305	300	5000	460	200	1600
10	250	340	430	500	310	275	280	400	2200	450	210	620
11	250	340	440	400	305	285	260	470	2000	440	210	560
12	240	340	430	350	300	300	255	295	1800	430	210	500
13	240	340	410	340	295	325	255	265	1500	410	205	480
14	250	340	410	340	290	275	255	250	1200	405	200	460
15	700	350	405	330	290	265	255	450	1000	410	200	440
16	1700	350	410	340	290	275	250	1000	900	410	200	410
17	700	360	400	350	295	275	245	420	950	400	195	370
18	380	390	400	405	290	270	250	355	1100	380	200	340
19	800	410	395	395	300	265	245	335	2750	360	210	330
20	2000	400	390	370	300	260	245	325	5400	350	220	380
21	3800	370	390	370	280	255	250	290	2300	340	210	375
22	2880	400	390	360	270	235	260	240	1200	340	210	370
23	1200	700	390	350	280	245	260	235	900	330	210	370
24	680	1400	390	350	275	250	260	225	850	320	230	370
25	550	2300	385	350	270	250	260	350	910	300	240	380
26	500	1600	385	350	275	245	260	900	840	280	240	395
27	470	1800	385	350	280	245	260	1620	740	280	235	390
28	430	2000	385	350	280	240	260	1400	650	290	250	395
29	410	1100	385	345	---	240	265	900	610	270	260	400
30	400	700	385	345	---	240	300	500	570	240	295	400
31	400	---	385	360	---	240	---	1400	---	200	280	---
TOTAL	24300	22890	12885	11555	10700	8125	7755	15095	83470	12105	6795	16185
MEAN	784	763	416	373	382	262	259	487	2782	390	219	540
MAX	3800	2300	550	500	1500	325	305	1620	12200	560	295	2500
MIN	240	340	385	330	270	235	245	215	570	200	190	270
AC-FT	48200	45400	25560	22920	21220	16120	15380	29940	165600	24010	13480	32100

CAL YR 1985 TOTAL 196355 MEAN 538 MAX 5000 MIN 200 AC-FT 389500
WTR YR 1986 TOTAL 231860 MEAN 635 MAX 12200 MIN 190 AC-FT 459900

08183900 CIBOLO CREEK NEAR BOERNE, TX

LOCATION.--Lat 29°46'26", long 98°41'50", Kendall County, Hydrologic Unit 12100304, on left bank 0.6 mi upstream from Southern Pacific Lines bridge, 0.9 mi downstream from Menger Creek, and 2.5 mi southeast of Boerne.

DRAINAGE AREA.--68.4 mi^2.

PERIOD OF RECORD.--March 1962 to current year.

REVISED RECORDS.--WDR TX-73-1: 1964-65, 1966(P), 1968-72(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,339.61 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known diversion above station. Flow is affected at times by discharge from the flood-detention pools of four floodwater-retarding structures with a combined detention capacity of 8,850 acre-ft. These structures control runoff from 34.0 mi^2. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--24 years, 27.3 ft^3/s (5.42 in/yr), 19,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,400 ft^3/s Sept. 27, 1964 (gage height, 19.15 ft, from floodmark), from rating curve extended above 2,500 ft^3/s on basis of slope-area measurement at 12,000 ft^3/s and contracted-opening measurement of 36,400 ft^3/s; no flow at times in 1962-64, 1966-67, 1971, and 1984.

Maximum stage since at least 1892, that of Sept. 27, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Second highest flood in 1952 reached a stage of 16.3 ft (discharge, 25,600 ft^3/s), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 31	1230	*711	*4.06				

Minimum daily discharge, 4.5 ft^3/s Oct. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	13	44	26	17	20	12	7.9	66	43	20	48
2	7.3	22	35	26	17	20	11	10	71	39	19	57
3	5.9	19	34	26	169	20	11	11	80	37	21	46
4	5.5	17	33	25	121	21	12	9.6	88	35	21	28
5	4.9	16	33	23	78	21	12	9.4	66	31	24	22
6	4.9	15	30	23	61	21	12	8.5	55	29	20	26
7	4.9	15	29	20	49	21	12	7.9	86	27	19	39
8	4.8	15	29	29	45	21	12	12	157	25	16	29
9	4.8	15	29	30	42	21	11	6.7	232	25	12	22
10	5.3	15	29	30	37	21	15	9.8	133	25	13	18
11	4.9	15	147	27	35	20	11	10	103	26	12	17
12	4.6	16	89	25	32	22	11	9.6	89	25	13	73
13	4.5	15	67	24	32	19	11	9.0	87	23	15	35
14	4.9	15	57	23	31	19	10	8.8	76	24	12	24
15	54	13	52	22	30	18	8.9	13	67	29	11	20
16	7.5	15	50	22	30	18	8.3	11	62	26	10	17
17	7.1	13	45	22	29	17	7.9	11	57	23	10	12
18	6.9	13	45	21	29	18	8.0	10	228	22	9.3	11
19	15	14	41	21	28	16	8.5	11	216	24	8.6	13
20	22	13	40	20	26	14	8.4	12	147	24	8.4	11
21	24	12	39	20	24	13	7.8	18	119	23	9.7	11
22	26	12	38	19	23	13	7.5	18	98	24	9.8	11
23	23	12	37	18	23	13	7.0	18	87	31	13	11
24	21	14	35	18	22	13	6.4	17	78	31	13	11
25	19	16	32	18	22	13	6.1	18	71	29	13	9.6
26	18	15	30	16	23	13	6.0	70	64	27	11	9.2
27	16	205	30	16	23	13	6.9	126	58	24	11	8.3
28	15	74	30	15	21	13	9.3	40	55	23	11	8.3
29	14	58	29	16	---	13	8.1	27	51	20	13	8.7
30	13	51	29	16	---	13	7.8	23	46	19	13	8.4
31	12	---	28	16	---	12	---	197	---	19	18	---
TOTAL	390.4	773	1315	673	1119	530	285.9	770.2	2893	832	429.8	664.5
MEAN	12.6	25.8	42.4	21.7	40.0	17.1	9.53	24.8	96.4	26.8	13.9	22.1
MAX	54	205	147	30	169	22	15	197	232	43	24	73
MIN	4.5	12	28	15	17	12	6.0	6.7	46	19	8.4	8.3
CFSM	.18	.38	.62	.32	.58	.25	.14	.36	1.41	.39	.20	.32
IN.	.21	.42	.72	.37	.61	.29	.16	.42	1.57	.45	.23	.36
AC-FT	774	1530	2610	1330	2220	1050	567	1530	5740	1650	653	1320

CAL YR 1985 TOTAL 10312.4 MEAN 28.3 MAX 250 MIN 1.0 CFSM .41 IN. 5.61 AC-FT 20450
WTR YR 1986 TOTAL 10675.8 MEAN 29.2 MAX 232 MIN 4.5 CFSM .43 IN. 5.81 AC-FT 21180

BEST COPY AVAILABLE

08185000 CIBOLO CREEK AT SELMA, TX

LOCATION.--Lat 29°35'38", long 98°18'39", Bexar-Guadalupe County line, Hydrologic Unit 12100304, on right bank 0.6 mi downstream from Missouri-Kansas-Texas Railroad Co. bridge and 0.9 mi upstream from bridge on Interstate Highway 35 at Selma.

DRAINAGE AREA.--274 mi².

PERIOD OF RECORD.--March 1946 to current year. Figures for water year 1960 in WSP 1813 are in error and should be disregarded.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 728.34 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Small diversion above station. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08183900. Considerable flow of Cibolo Creek enters the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between this station and the station near Boerne (station 08183900).

AVERAGE DISCHARGE.--40 years, 14.5 ft³/s (10,510 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,000 ft³/s July 16, 1973 (gage height, 26.2 ft, from floodmark), from rating curve extended above 16,000 ft³/s on basis of field estimate of 54,000 ft³/s and contracted-opening measurement of 65,000 ft³/s; no flow most of time.

Maximum stage since at least 1869, that of July 16, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 26 ft occurred in 1889, but stage for flood in 1913 is unknown, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 4	1100	*481	*4.93	No other peak greater than base discharge.			

Minimum daily discharge, no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	130	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	5.6	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	63	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	35	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.34	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	3.2	---	.00	.00	---
TOTAL	.00	124.34	.00	.00	.00	.00	.00	3.20	135.68	.00	.00	.00
MEAN	.00	4.14	.00	.00	.00	.00	.00	.10	4.52	.00	.00	.00
MAX	.00	63	.00	.00	.00	.00	.00	3.2	130	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	247	.00	.00	.00	.00	.00	6.3	269	.00	.00	.00

CAL YR 1985	TOTAL	12295.30	MEAN	33.7	MAX	8490	MIN	.00	AC-FT	24390
WTR YR 1986	TOTAL	263.22	MEAN	.72	MAX	130	MIN	.00	AC-FT	522

08186000 CIBOLO CREEK NEAR FALLS CITY, TX

LOCATION.--Lat 29°00'50", long 97°55'48", Karnes County, Hydrologic Unit 12100304, on right bank at downstream side of pier of bridge on State Highway 123, 5.7 mi northeast of Falls City, and 10.4 mi upstream from mouth.

DRAINAGE AREA.--827 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 733: 1931. WSP 1058: 1935. WSP 1562: 1931(M), 1933. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 264.28 ft above National Geodetic Vertical Datum of 1929. Nov. 4, 1930, to Aug. 4, 1940, water-stage recorder at site 1,600 ft upstream at datum 0.56 ft higher. Aug. 5 to Sept. 13, 1940, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. There are several diversions for irrigation above station. Much of the base flow is effluent from the Carrizo Sands in the vicinity of Sutherland Springs. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures with a combined detention capacity of 16,620 acre-ft. These structures control runoff from 62.9 mi².

AVERAGE DISCHARGE.--56 years, 120 ft³/s (86,940 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,600 ft³/s July 6, 1942 (gage height, 34.45 ft); maximum gage height, 35.44 ft Sept. 28, 1973; no flow July 30, 31, Aug. 4-22, 1956, and Aug. 1, 1971.
Maximum stage since at least 1890, that of Sept. 28, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--In October 1913, a stage of 35 ft occurred (discharge, about 35,000 ft³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 5	2400	*8,310	*22.17	No other peak greater than base discharge.			

Minimum daily discharge, 15 ft³/s Oct. 14, Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	248	185	28	37	28	23	19	180	52	19	19
2	51	1100	139	28	34	27	23	19	194	47	19	18
3	40	203	105	27	37	28	23	22	110	44	19	19
4	30	112	83	27	41	29	23	32	78	40	18	20
5	24	62	71	27	56	29	22	31	3890	38	18	23
6	20	43	63	26	77	29	22	27	3960	35	18	23
7	19	34	55	25	56	29	22	24	461	33	19	100
8	18	29	49	26	44	29	22	21	371	31	19	64
9	19	26	46	27	37	30	22	20	342	30	17	65
10	20	24	43	29	34	29	22	19	379	28	17	47
11	19	27	41	31	31	29	21	20	306	28	17	36
12	19	29	40	34	30	29	20	19	284	26	18	32
13	17	24	41	34	29	29	20	19	309	25	18	29
14	15	23	40	33	29	29	20	18	322	25	18	26
15	86	22	36	32	28	30	20	26	268	23	17	30
16	48	22	33	30	28	32	20	29	222	24	19	30
17	57	22	33	31	29	29	20	32	169	25	19	27
18	41	23	32	58	29	27	20	33	204	25	17	27
19	51	22	32	85	28	27	19	43	336	24	17	26
20	206	22	31	58	29	27	19	30	279	23	17	25
21	1350	22	30	44	29	27	19	22	168	23	16	25
22	913	23	30	38	29	27	19	20	133	22	16	25
23	219	24	30	36	27	26	18	18	110	22	16	25
24	93	562	30	36	27	26	18	17	97	22	15	27
25	59	346	29	36	27	25	18	16	90	21	16	26
26	44	213	29	36	27	25	17	16	108	20	16	25
27	36	1110	29	35	28	25	17	94	95	20	16	25
28	30	1920	29	35	28	25	16	132	74	20	19	23
29	26	715	29	36	---	24	16	105	63	19	19	24
30	23	252	29	36	---	24	17	90	57	19	17	22
31	21	---	29	37	---	24	---	169	---	18	17	---
TOTAL	3674	7304	1521	1101	965	853	598	1202	13659	852	543	933
MEAN	119	243	49.1	35.5	34.5	27.5	19.9	38.8	455	27.5	17.5	31.1
MAX	1350	1920	185	85	77	32	23	169	3960	52	19	100
MIN	15	22	29	25	27	24	16	16	57	18	15	18
AC-FT	7290	14490	3020	2180	1910	1690	1190	2380	27090	1690	1080	1850

CAL YR 1985 TOTAL 38715.7 MEAN 106 MAX 4060 MIN 8.4 AC-FT 76790
WTR YR 1986 TOTAL 33205 MEAN 91.0 MAX 3960 MIN 15 AC-FT 65860

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1961 to current year. Chemical and biochemical analyses: December 1969 to current year. Sediment analyses: November 1965 to May 1969.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.

INSTRUMENTATION.--Beginning March 1981, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,270 microsiemens May 20, 21, 1971; minimum daily, 120 microsiemens Oct. 7, 1981.
WATER TEMPERATURES: Maximum daily, 34.0°C July 31, Aug. 8, 9, 1980; minimum daily, 0.0°C Dec. 25, 26, 1983.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,760 microsiemens Feb. 4; minimum daily, 130 microsiemens Nov. 2.
WATER TEMPERATURES: Maximum daily, 31.5°C July 30, Aug. 1-3; minimum daily, 8.0°C Jan. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3
NOV										
18...	1735	25	1150	8.50	22.0	8.7	99	1.5	360	140
JAN										
10...	1715	29	1360	8.36	10.5	14.2	129	--	390	120
13...	1245	30	1180	--	9.0	--	--	1.4	--	--
FEB										
28...	1127	30	1470	8.30	16.0	9.2	93	1.2	400	150
APR										
24...	1600	18	1460	8.41	25.0	10.2	124	3.2	380	130
JUN										
20...	1250	260	424	7.50	28.5	6.1	--	4.0	130	7
AUG										
22...	1400	12	1330	8.10	27.0	7.6	96	2.7	380	140

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
NOV									
18...	110	21	110	3	9.4	220	200	130	0.4
JAN									
10...	120	23	130	3	6.8	271	220	160	0.4
13...	--	--	--	--	--	--	--	--	--
FEB									
28...	120	25	160	4	7.0	253	240	200	0.4
APR									
24...	110	26	160	4	8.2	254	250	180	0.4
JUN									
20...	42	5.4	31	1	7.9	120	42	24	0.3
AUG									
22...	110	25	150	3	10	235	250	180	0.5

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
NOV									
18...	14	730	0.58	0.02	0.60	0.07	0.53	0.6	0.40
JAN									
10...	0.6	820	0.49	0.01	0.50	0.04	0.46	0.5	0.23
13...	--	--	--	--	--	--	--	--	--
FEB									
28...	0.6	900	0.48	0.02	0.50	0.05	0.45	0.5	0.23
APR									
24...	18	900	--	<0.01	0.50	0.13	1.1	1.2	0.49
JUN									
20...	14	240	0.54	0.06	0.60	0.20	1.6	1.8	0.40
AUG									
22...	10	880	0.19	0.01	0.20	0.22	1.2	1.4	0.17

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	3674	448	264	2620	39	385	60	597	150
NOV. 1965	7304	328	193	3800	28	550	43	857	110
DEC. 1985	1521	567	337	1390	53	219	81	332	180
JAN. 1986	1101	1200	732	2170	140	405	200	583	350
FEB. 1986	965	1250	769	2000	140	377	210	541	370
MAR. 1986	853	1430	885	2040	180	403	250	571	410
APR. 1986	598	1460	902	1460	180	290	250	410	410
MAY 1986	1202	1020	618	2010	110	361	160	525	310
JUNE 1986	13659	439	258	9510	37	1360	58	2140	150
JULY 1986	852	1250	768	1770	150	334	210	479	370
AUG. 1986	543	1320	811	1190	160	228	220	325	380
SEPT 1986	933	1160	705	1780	130	325	190	471	340
TOTAL	33205	**	**	31700	**	5240	**	7830	**
WTD.AVG.	91	590	354	**	58	**	87	**	190

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	480	400	440	1100	170	921			265	---	---	1270
2	760	480	627	310	130	223			239	---	---	1290
3	860	760	808	580	270	378			304	---	---	1310
4	940	870	900	740	610	666			325	---	---	1320
5	950	930	942	760	690	735			349	---	---	1350
6	1010	950	976	730	650	674			382	---	---	1380
7	1080	1010	1040	730	660	695			407	---	---	1410
8	1110	1080	1100	860	730	798			430	---	---	1390
9	1110	1000	1050	950	860	902			457	---	---	1380
10	1010	980	993	1020	950	985			481	---	---	1360
11	1030	1010	1030	1060	820	1010			510	---	---	1330
12	1050	1040	1050	1020	810	915			548	---	---	1300
13	1070	1050	1060	1130	1030	1090			576	---	---	1310
14	1110	1070	1080	1160	1120	1140			604	---	---	1340
15	1280	370	763	1180	1140	1160			637	---	---	1380
16	630	390	497	1170	1150	1160			685	---	---	1440
17	850	610	786	1160	1140	1150			723	---	---	1420
18	880	790	828	1200	1160	1180			760	---	---	1210
19	870	790	815	1180	1160	1170			797	---	---	890
20	850	320	435	1180	1160	1170			834	---	---	925
21	530	180	363	1190	1170	1180			898	---	---	968
22	490	180	260	1180	1160	1170			937	---	---	1000
23	410	330	378	1180	620	1140			984	---	---	1040
24	510	410	453	840	150	305			1020	---	---	1060
25	600	510	552	840	290	593			1050	---	---	1080
26	720	610	668	410	340	375			1090	---	---	1090
27	800	720	759	420	180	273			1140	---	---	1120
28	860	790	826	460	150	160			1180	1180	1120	1150
29	930	860	893	---	---	192			1210	1240	1180	1210
30	980	920	948	---	---	213			1230	1280	1240	1260
31	1020	980	1000	---	---	---			1240	1300	1260	1280
MONTH	1280	180	785	1200	130	791			719	1300	1120	1230

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1300	1280	1290	1420	1390	1400	1510	1480	1500	1450	1420	1440
2	1320	1290	1300	1420	1410	1410	1520	1480	1500	1430	1400	1420
3	1640	1290	1350	1440	1420	1430	1510	1480	1500	1400	1380	1390
4	1760	1310	1390	1440	1410	1420	1510	1480	1500	1390	1250	1310
5	1320	1140	1240	1430	1400	1410	1510	1470	1500	1270	1220	1240
6	1130	990	1070	1420	1390	1410	1510	1480	1500	1260	1230	1250
7	1060	1000	1020	1430	1400	1420	1510	1490	1500	1280	1250	1270
8	1150	1060	1110	1440	1420	1430	1520	1490	1500	1310	1270	1290
9	1200	1150	1180	1440	1430	1430	1510	1490	1500	1370	1300	1340
10	1230	1200	1210	1450	1430	1440	1490	1460	1480	1380	1330	1360
11	1250	1220	1240	1450	1430	1440	1480	1440	1470	1420	1360	1390
12	1250	1190	1220	1450	1430	1440	1480	1440	1460	1420	1400	1410
13	1200	1190	1200	1430	1410	1420	1500	1470	1480	1420	1390	1410
14	1250	1190	1220	1420	1400	1410	1480	1430	1460	1400	1380	1400
15	1300	1260	1280	1410	1370	1390	1440	1350	1400	1380	1350	1360
16	1340	1310	1320	1430	1380	1400	1370	1320	1340	1390	1250	1310
17	1340	1320	1330	1410	1370	1390	1390	1360	1370	1270	1170	1240
18	1360	1330	1340	1410	1370	1390	1410	1380	1400	1190	1120	1160
19	1350	1340	1350	1410	1380	1400	1440	1380	1410	1250	1030	1160
20	1350	1330	1340	1430	1400	1420	1440	1400	1430	1140	1040	1090
21	1340	1330	1330	1420	1400	1410	1460	1410	1430	1180	1090	1150
22	1340	1310	1320	1430	1410	1420	1460	1410	1450	1240	1120	1200
23	1330	1300	1320	1460	1430	1440	1480	1440	1460	1290	1180	1250
24	1340	1320	1330	1460	1430	1450	1490	1460	1470	1320	1230	1290
25	1360	1320	1340	1470	1440	1460	1480	1450	1460	1360	1280	1320
26	1360	1330	1350	1480	1450	1470	1460	1430	1440	1360	1220	1300
27	1360	1330	1350	1500	1470	1480	1440	1420	1430	1340	330	1020
28	1420	1350	1380	1520	1470	1490	1450	1420	1430	1570	370	746
29	---	---	---	1530	1500	1510	1460	1440	1450	930	740	825
30	---	---	---	1530	1490	1510	1450	1420	1440	990	350	908
31	---	---	---	1520	1490	1510	---	---	---	600	290	446
MONTH	1760	990	1280	1530	1370	1430	1520	1320	1460	1570	290	1220

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	620	380	500	1020	970	1000	1360	1330	1340	1270	1250	1260
2	720	600	675	1070	1020	1050	1360	1340	1340	1270	1250	1260
3	580	520	545	1100	1070	1090	1400	1350	1380	1290	1270	1280
4	630	540	583	1140	1100	1120	1400	1360	1370	1290	1270	1280
5	650	240	368	1140	1120	1130	1390	1330	1350	1300	1280	1290
6	360	250	288	1170	1140	1150	1370	1330	1360	1320	1300	1310
7	460	360	420	1200	1170	1180	1370	1330	1340	1340	880	1130
8	490	460	474	1210	1180	1190	1350	1320	1340	900	880	888
9	510	480	493	1220	1190	1210	1320	1290	1310	930	890	904
10	510	480	492	1230	1210	1220	1320	1300	1310	1040	940	978
11	550	490	509	1250	1220	1240	1320	1310	1320	1100	1040	1070
12	570	540	557	1270	1250	1260	1320	1300	1310	1150	1110	1130
13	570	530	562	1260	1240	1250	1330	1310	1320	1210	1160	1190
14	630	520	550	1290	1260	1270	1330	1290	1300	1260	1220	1240
15	610	550	577	1330	1290	1310	1300	1280	1290	1280	1100	1200
16	630	610	622	1370	1330	1350	1300	1280	1290	1130	1100	1120
17	690	630	664	1410	1360	1390	1310	1280	1300	1150	1130	1140
18	740	480	643	1420	1400	1410	1310	1280	1300	1170	1140	1160
19	700	500	610	1440	1420	1430	1310	1290	1300	1210	1180	1190
20	570	510	538	1460	1430	1440	1320	1300	1310	1210	1190	1200
21	710	570	648	1450	1430	1450	1320	1300	1310	1230	1210	1220
22	810	710	767	1450	1430	1440	1320	1300	1310	1240	1230	1230
23	870	800	835	1450	1440	1440	1330	1310	1320	1260	1240	1250
24	920	870	892	1460	1440	1450	1330	1310	1320	1280	1260	1270
25	920	890	903	1450	1420	1440	1330	1320	1330	1300	1280	1290
26	900	810	848	1430	1400	1410	1340	1320	1330	1310	1290	1300
27	860	810	826	1400	1350	1380	1350	1320	1330	1310	1290	1300
28	920	860	893	1350	1310	1330	1340	1310	1320	1320	1300	1310
29	940	910	925	1320	1300	1310	1330	1310	1320	1320	1260	1280
30	980	910	943	1320	1300	1310	1320	1260	1290	1280	1260	1270
31	---	---	---	1340	1310	1320	1280	1250	1260	---	---	---
MONTH	980	240	638	1460	970	1290	1400	1250	1320	1340	880	1200

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.0	13.0	14.0	13.0	10.0	12.5	18.5	16.0	17.5	14.0	13.0	13.5
2	15.5	13.0	14.0	11.0	9.5	10.0	16.0	13.5	15.0	15.0	13.0	14.0
3	16.5	14.0	15.0	11.5	10.0	10.5	13.5	13.0	13.5	15.5	13.0	14.0
4	17.5	14.5	16.0	12.0	10.5	11.5	15.0	13.5	14.0	16.5	14.0	15.0
5	16.5	14.0	15.0	12.0	10.5	11.0	15.0	14.0	14.5	14.5	12.5	13.5
6	16.0	13.0	14.5	13.0	10.5	11.5	15.0	13.0	14.0	13.5	11.5	12.5
7	16.5	14.0	15.0	13.0	10.5	11.5	15.0	13.0	14.0	13.0	11.5	12.0
8	17.5	15.5	16.5	13.5	11.5	12.5	16.5	14.0	15.0	11.5	10.0	10.5
9	19.0	17.0	17.5	15.0	12.5	14.0	18.0	15.5	16.5	9.5	9.0	9.0
10	20.0	18.0	18.5	16.5	14.5	15.5	19.0	17.5	18.0	11.0	8.0	9.5
11	20.5	18.5	19.5	16.5	16.0	16.0	19.0	14.5	16.5	11.5	9.0	10.0
12	20.5	19.0	19.5	17.5	16.0	16.5	14.5	12.5	13.5	12.5	9.5	11.0
13	21.0	19.0	20.0	18.0	16.5	17.0	12.5	11.0	12.0	17.0	10.0	13.5
14	21.0	19.5	20.0	18.0	16.5	17.5	11.5	9.5	10.5	16.5	14.0	15.5
15	20.0	17.0	18.0	17.5	15.0	16.5	11.5	8.5	10.0	18.0	14.5	16.5
16	18.0	16.5	17.0	19.0	15.5	16.5	13.0	10.5	11.5	18.0	17.0	17.5
17	19.0	17.0	18.0	20.0	17.0	19.0	20.0	11.5	12.0	20.0	18.0	18.5
18	20.0	18.0	19.0	22.0	18.5	21.5	14.0	12.0	13.0	20.5	18.5	19.5
19	19.0	18.0	18.5	22.0	20.0	21.5	13.0	11.0	12.0	20.5	18.5	19.5
20	18.0	16.5	17.0	19.5	16.5	17.5	13.0	10.5	12.0	21.0	18.5	19.5
21	17.0	15.5	16.5	16.5	15.5	16.0	13.5	11.0	12.5	22.5	19.0	20.5
22	17.0	16.0	16.5	17.5	16.0	17.0	14.5	12.5	13.5	21.0	19.5	20.0
23	17.5	16.5	17.0	19.0	17.5	18.0	15.5	13.0	14.5	20.5	18.5	19.5
24	18.5	17.0	17.5	21.0	19.0	20.0	14.5	13.0	13.5	21.0	19.0	20.0
25	19.0	17.5	18.0	21.0	20.0	20.5	13.0	11.0	12.0	21.5	19.5	20.5
26	19.0	17.5	18.0	21.5	20.5	21.0	11.5	10.0	11.0	20.0	18.0	19.0
27	18.0	16.5	17.0	21.5	19.0	20.0	13.5	11.5	12.5	18.5	15.5	17.0
28	16.0	15.0	15.5	20.0	18.0	19.0	14.5	12.5	13.5	17.5	14.5	16.0
29	15.5	14.5	15.0	18.0	17.0	17.5	15.0	12.5	13.5	19.0	16.0	17.0
30	14.5	13.5	14.0	18.5	17.0	17.5	15.5	13.5	14.5	19.5	17.5	18.5
31	14.5	12.5	13.5	---	---	---	15.5	14.0	14.5	20.5	18.5	19.5
MONTH	21.0	12.5	17.0	22.0	9.5	16.0	20.0	8.5	13.5	22.5	8.0	16.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	21.0	19.5	20.5	21.0	17.0	19.0	25.0	23.5	24.0	25.0	24.5	25.0
2	22.0	21.0	21.5	22.0	18.0	20.0	26.0	23.0	24.5	24.5	23.5	24.0
3	22.5	22.0	22.0	22.5	20.0	21.0	24.5	24.0	24.5	24.0	22.5	23.0
4	23.5	21.5	22.0	23.0	19.5	21.0	26.5	24.0	25.0	23.5	22.5	23.0
5	22.5	21.0	21.5	23.0	19.0	21.0	26.5	25.5	25.5	24.5	23.0	23.5
6	21.5	19.5	20.5	22.5	19.5	21.0	26.0	25.5	25.5	26.0	23.5	24.5
7	21.0	19.0	20.0	22.0	18.5	20.5	27.5	25.0	26.0	25.5	24.5	25.0
8	20.0	17.0	18.5	23.0	20.5	21.5	28.5	25.5	27.0	26.5	24.5	25.5
9	17.0	15.0	16.0	24.0	21.5	22.5	27.0	24.5	25.5	25.5	24.5	25.0
10	15.5	14.0	14.5	26.0	23.0	24.0	24.0	23.0	23.0	24.5	23.5	24.0
11	15.5	12.5	14.0	25.0	24.0	24.5	24.5	22.5	23.5	27.0	22.5	24.5
12	14.0	12.0	13.5	25.0	22.5	23.5	27.0	23.5	25.0	27.5	24.5	25.5
13	14.5	13.0	14.0	22.5	21.0	22.0	28.0	25.0	26.0	27.0	25.0	25.5
14	18.5	14.5	16.5	22.5	20.0	21.0	26.5	24.5	26.0	25.5	24.5	25.0
15	19.5	15.5	17.5	23.5	20.0	21.5	25.5	23.5	24.5	24.5	24.0	24.5
16	21.0	18.0	19.5	23.5	20.0	21.5	24.5	23.0	23.5	24.5	24.0	24.5
17	22.5	19.5	20.5	23.5	21.0	22.0	24.5	23.0	24.0	26.0	24.0	24.5
18	23.5	19.0	21.0	24.5	22.5	23.0	25.0	24.0	24.5	25.0	22.5	23.5
19	24.0	19.5	22.0	22.0	20.0	21.0	26.5	24.5	25.0	25.0	21.5	23.0
20	24.5	20.0	22.5	21.5	19.0	20.0	26.5	23.5	25.0	25.5	21.5	23.5
21	22.5	18.5	20.0	21.5	18.0	19.5	26.5	22.5	24.5	25.5	22.5	24.0
22	19.5	17.0	18.0	22.0	18.0	20.0	26.5	22.5	24.0	26.5	23.0	24.5
23	20.0	16.0	18.0	22.5	19.0	20.5	24.5	20.5	22.5	27.0	24.5	25.5
24	21.0	17.0	19.0	22.5	19.5	21.0	25.0	21.5	23.0	27.5	25.0	26.0
25	22.0	18.0	19.5	23.5	20.0	21.5	25.0	21.5	23.0	28.0	25.5	26.5
26	23.0	18.5	20.5	24.0	20.5	22.0	25.5	23.0	24.0	26.0	25.0	25.5
27	22.0	19.5	21.0	24.0	21.5	22.5	25.0	23.5	24.0	25.5	23.0	24.0
28	21.0	19.0	20.0	25.0	21.5	23.0	26.5	24.0	25.0	25.5	23.0	24.5
29	---	---	---	24.5	21.0	23.0	25.5	24.5	25.0	26.5	24.5	25.5
30	---	---	---	24.5	22.5	23.5	26.0	24.0	25.0	26.5	24.5	25.5
31	---	---	---	25.0	22.5	23.5	---	---	---	25.0	24.0	24.5
MONTH	24.5	12.0	19.0	26.0	17.0	21.5	28.5	20.5	24.5	28.0	21.5	24.5

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	25.0	24.5	25.0	30.0	27.5	28.5	31.5	28.0	29.5	28.5	26.5	27.0
2	25.5	25.0	25.5	30.0	27.5	28.5	31.5	28.5	29.5	29.0	26.5	27.5
3	26.0	24.5	25.5	30.5	28.0	29.0	31.5	28.0	29.5	29.5	26.5	28.0
4	27.5	25.5	26.5	30.5	28.0	29.0	31.0	28.0	29.0	28.5	27.0	27.5
5	27.0	24.0	25.0	30.5	27.5	29.0	30.0	27.5	28.5	29.0	27.0	28.0
6	27.0	25.5	26.0	29.5	27.5	28.5	29.0	27.0	28.0	28.0	27.0	27.5
7	28.0	27.0	27.5	29.5	27.5	28.5	30.0	27.0	28.0	26.5	24.0	25.0
8	27.5	26.0	27.0	29.5	27.0	28.0	30.0	27.5	28.5	25.5	24.5	25.0
9	27.5	26.5	27.0	30.0	27.0	28.5	30.0	27.0	28.5	27.5	25.0	26.0
10	28.0	26.5	27.5	30.0	27.0	28.5	30.0	27.5	28.5	28.5	26.0	27.0
11	27.5	27.0	27.5	30.0	27.0	28.5	30.5	27.5	28.5	29.0	26.5	27.5
12	28.0	27.0	27.5	30.0	27.5	28.5	29.5	27.5	28.0	29.0	27.0	28.0
13	28.0	27.0	27.5	28.5	27.5	28.0	30.0	27.0	28.5	29.5	27.0	28.0
14	28.0	27.0	27.5	29.5	27.0	28.0	29.5	27.0	28.0	29.5	27.0	28.0
15	28.0	27.0	27.5	29.0	27.0	28.0	28.5	27.0	28.0	29.0	27.0	28.0
16	28.5	27.5	28.0	28.5	26.5	27.5	29.5	27.0	28.0	28.5	27.0	27.5
17	29.0	28.0	28.5	29.5	26.5	27.5	30.5	27.5	28.5	29.0	27.0	28.0
18	28.0	26.5	27.5	29.5	26.5	28.0	31.0	27.0	29.0	29.5	27.0	28.0
19	28.0	27.0	27.5	30.0	27.0	28.0	31.0	27.5	29.0	28.5	26.5	27.5
20	28.0	26.5	27.5	30.0	27.0	28.5	30.5	28.0	29.0	28.5	26.5	27.5
21	29.0	27.5	28.0	30.5	27.5	29.0	29.0	27.0	28.0	28.5	26.5	27.5
22	29.0	27.0	28.0	30.5	27.5	29.0	28.0	26.0	27.0	29.0	26.5	27.5
23	29.0	27.5	28.5	30.0	27.5	29.0	27.5	26.0	26.5	29.0	26.5	27.5
24	28.5	27.5	28.0	31.0	28.0	29.0	28.0	26.0	27.0	28.5	26.5	27.5
25	28.5	27.0	28.0	31.0	28.0	29.0	28.5	26.0	27.0	28.5	26.5	27.0
26	29.0	27.0	28.0	31.0	28.0	29.5	29.0	26.0	27.5	28.5	26.5	27.5
27	29.0	27.5	28.0	31.0	28.0	29.0	29.5	26.5	28.0	28.5	26.5	27.5
28	29.5	28.0	28.5	31.0	28.0	29.0	28.5	26.5	27.5	28.5	26.5	27.5
29	30.0	28.0	28.5	31.0	28.0	29.5	28.0	26.0	27.0	28.5	26.5	27.5
30	30.0	27.5	28.5	31.5	28.0	29.5	28.0	24.5	26.5	28.5	26.5	27.5
31	---	---	---	31.0	28.0	29.5	28.5	26.0	27.0	---	---	---
MONTH	30.0	24.0	27.5	31.5	26.5	28.5	31.5	24.5	28.0	29.5	24.0	27.5

08186500 ECLETO CREEK NEAR RUNGE, TX

LOCATION.--Lat 28°55'12", long 97°46'19", Karnes County, Hydrologic Unit 12100303, on left bank 55 ft downstream from Farm Road 81, 215 ft to left of left end of bridge, 2.6 mi upstream from Salt Branch, 4.5 mi northwest of Runge, and 5.2 mi upstream from mouth.

DRAINAGE AREA.--239 mi².

PERIOD OF RECORD.--March 1962 to current year.
Water-quality records.--Sediment records: February 1966 to September 1975.

GAGE.--Water-stage recorder. Datum of gage is 215.03 ft above National Geodetic Vertical Datum of 1929, from State Department of Highways and Public Transportation datum.

REMARKS.--Estimated daily discharges: Nov. 8-18, Dec. 6 to Jan. 9, June 10 to July 14, July 27 to and Aug. 18. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--24 years, 36.6 ft³/s (2.08 in/yr), 26,520 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,000 ft³/s Aug. 31, 1981 (gage height, 34.10 ft, from floodmark), from rating curve extended above 7,300 ft³/s on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information begins with the flood in June 1903, which reached a stage of 34 ft, discharge 71,000 ft³/s. A stage of 32 ft, discharge 39,000 ft³/s, occurred in September 1952, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	2130	1,320	11.12	Nov. 28	0700	1,720	12.83
Nov. 24	1800	*7,340	*23.23				

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	5.3	35	.44	1.4	.40	.76	.09	72	.00	.00	.00
2	4.7	3.1	20	.44	1.4	.43	.49	.09	30	.00	.00	.00
3	5.7	1.9	13	.44	1.1	.43	.48	.09	30	.00	.00	.02
4	15	3.9	7.7	.44	.89	.45	.52	.09	5.1	.00	.00	.04
5	2.8	.70	5.1	.44	.88	.48	.54	.09	2.6	.00	.00	.06
6	.57	.38	4.0	.50	1.4	.57	.54	.09	.74	.00	.00	.10
7	.17	.30	3.0	.60	1.6	.61	.54	.08	78	.00	.00	10
8	.05	.30	2.4	.80	1.6	.68	.54	.07	98	.00	.00	7.0
9	.03	.29	2.0	1.5	1.3	.75	.59	.06	25	.00	.00	3.5
10	.00	.29	1.4	1.8	.99	.77	.61	1.7	10	.00	.00	2.3
11	.00	.28	1.2	1.7	1.0	.83	.63	.20	4.0	.00	.00	1.5
12	.00	.28	1.0	1.8	1.1	.93	.70	.07	1.0	.00	.00	1.0
13	.00	.28	.84	.90	1.0	1.0	7.8	.06	.60	.00	.00	.80
14	.00	.28	.74	.56	.70	1.0	.98	.03	.40	.00	.00	.60
15	.07	.27	.68	.48	.67	.98	.27	.04	.50	.00	.00	.45
16	16	.27	.62	.48	.61	1.0	.17	.05	.44	.00	.00	.35
17	20	.27	.58	.48	.43	1.0	.16	.08	.30	.00	.00	.25
18	5.8	.27	.56	.48	.37	.94	.16	.10	.18	.00	.00	.18
19	567	.27	.54	.56	.33	.77	.16	.08	.12	.00	.00	.14
20	398	.20	.52	.67	.32	.81	.16	.06	.08	.00	.00	.10
21	25	.14	.50	1.2	.31	.72	.12	.04	.05	.00	.00	.09
22	8.5	.14	.49	1.4	.30	.54	.10	.03	.03	.00	.00	.08
23	4.0	.11	.48	.82	.30	.54	.10	.01	.02	.00	.00	.07
24	1.8	4180	.47	.63	.30	.59	.09	.05	.02	.00	.00	.06
25	.69	2800	.46	.42	.35	.66	.09	.08	.01	.00	.00	.06
26	.51	175	.45	.34	.38	.67	.09	7.5	.01	.00	.00	.05
27	218	530	.45	.36	.38	1.1	.09	8.9	.01	.00	.00	.04
28	233	1450	.45	.38	.38	1.2	.09	5.8	.00	.00	.00	.04
29	43	455	.44	.41	---	1.2	.08	.39	.00	.00	.00	.03
30	20	77	.44	.50	---	1.2	.09	2.1	.00	.00	.00	.03
31	10	---	.44	.58	---	1.2	---	115	---	.00	.00	---
TOTAL	1654.39	9686.52	105.95	22.55	21.79	24.45	17.74	143.12	359.21	.00	.00	28.94
MEAN	53.4	323	3.42	.73	.78	.79	.59	4.62	12.0	.00	.00	.96
MAX	567	4180	35	1.8	1.6	1.2	7.8	115	98	.00	.00	10
MIN	.00	.11	.44	.34	.30	.40	.08	.01	.00	.00	.00	.00
CFSM	.22	1.35	.01	.00	.00	.00	.00	.02	.05	.00	.00	.00
IN.	.26	1.51	.02	.00	.00	.00	.00	.02	.06	.00	.00	.00
AC-FT	3280	19210	210	45	43	48	35	284	712	.00	.00	57

CAL YR 1985 TOTAL 14845.76 MEAN 40.7 MAX 4180 MIN .00 CFSM .17 IN. 2.31 AC-FT 29450
WTR YR 1986 TOTAL 12064.66 MEAN 33.1 MAX 4180 MIN .00 CFSM .14 IN. 1.88 AC-FT 23930

08188500 SAN ANTONIO RIVER AT GOLIAD, TX
(National stream-quality accounting network)

LOCATION.--Lat 28°38'58", long 97°23'04", Goliad County, Hydrologic Unit 12100303, on right bank at upstream side of bridge on U.S. Highway 183, 1.2 mi southeast of courthouse in Goliad, 11.7 mi upstream from Manahuilla Creek, and 66.5 mi upstream from mouth.

DRAINAGE AREA.--3,921 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1924 to March 1929, February 1939 to current year.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 91.08 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 31, 1929, nonrecording gage at Texas and New Orleans Railroad Co. bridge 0.9 mi upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Many diversions and regulations above station (see station 08181800). Flow is affected at times by discharge from the flood-detention pools of 36 floodwater-retarding structures with a combined detention capacity of 66,730 acre-ft. These structures control runoff from 213 mi^2.

AVERAGE DISCHARGE.--51 years (water years 1925-28, 1940-86), 664 ft^3/s (481,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 138,000 ft^3/s Sept. 23, 1967 (gage height, 53.7 ft, from floodmark), from rating curve extended above 26,000 ft^3/s on basis of slope-area measurement of peak flow; minimum observed, 1.2 ft^3/s June 16, 1956.

Maximum stage since 1869, that of Sept. 23, 1967. Flood of July 9, 1942, reached a stage of 44.9 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in October 1913 and June 15, 1935, reached about the same stage as flood in 1942. Maximum stage since about 1800 occurred in 1869 and was several feet higher than flood of Sept. 23, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 10	0900	*10,700	*29.45	No other peak greater than base discharge.			

Minimum daily discharge, 223 ft^3/s Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1540	483	1620	425	375	292	241	245	809	772	314	271
2	1650	581	1010	419	375	294	239	255	949	731	274	319
3	1270	3070	805	423	381	312	234	297	3310	709	257	277
4	646	2240	695	419	548	304	244	393	3220	690	244	465
5	454	1640	637	398	510	293	253	352	1760	664	246	532
6	378	864	594	409	1270	289	250	289	2610	644	277	405
7	341	636	568	413	1290	291	244	243	5320	621	248	335
8	311	535	540	417	689	288	252	224	7950	594	253	527
9	290	463	533	404	512	283	255	228	9830	581	278	1210
10	281	438	519	429	436	280	246	356	10400	570	259	2240
11	288	432	517	517	403	286	298	396	5270	568	256	1620
12	283	412	508	561	382	286	304	306	2380	561	264	708
13	283	408	581	502	374	279	276	415	2050	544	268	569
14	284	397	561	435	372	288	257	480	1970	525	238	500
15	289	401	506	406	364	336	254	353	1750	512	235	461
16	331	406	487	390	352	337	241	283	1560	496	251	444
17	709	457	510	377	350	290	236	349	1310	461	240	431
18	1560	400	474	382	342	294	236	851	1360	472	238	409
19	789	400	462	384	344	323	245	530	1580	473	233	396
20	551	373	460	429	337	274	230	408	2160	454	226	365
21	707	374	452	494	340	266	224	390	3810	439	228	341
22	2620	421	443	446	330	261	226	349	5230	426	223	334
23	5240	446	443	419	336	256	229	326	3570	411	235	343
24	3970	758	446	409	323	263	227	303	1440	400	238	431
25	1480	4730	443	398	310	253	240	258	1180	400	247	358
26	903	4130	431	388	304	234	240	252	1070	396	242	371
27	739	1880	429	380	309	232	238	268	1120	388	258	343
28	647	3390	429	377	307	238	238	486	1060	351	234	334
29	585	4700	421	378	---	241	241	1290	893	320	248	367
30	540	3860	419	375	---	244	243	1640	830	321	257	365
31	511	---	427	375	---	242	---	1070	---	346	237	---
TOTAL	30470	39725	17370	12978	12565	8649	7381	13885	87751	15840	7746	16071
MEAN	983	1324	560	419	449	279	246	448	2925	511	250	536
MAX	5240	4730	1620	561	1290	337	304	1640	10400	772	314	2240
MIN	281	373	419	375	304	232	224	224	809	320	223	271
AC-FT	60440	78790	34450	25740	24920	17160	14640	27540	174100	31420	15360	31880

CAL YR 1985 TOTAL 259707 MEAN 712 MAX 5650 MIN 203 AC-FT 515100
WTR YR 1986 TOTAL 270431 MEAN 741 MAX 10400 MIN 223 AC-FT 536400

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1941 to December 1942, November 1944 to September 1946, September 1958 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: January 1968 to May 1982. Sediment analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1945 to September 1946, September 1958 to current year.
WATER TEMPERATURES: September 1958 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,580 microsiemens July 22, 1978; minimum daily, 138 microsiemens Oct. 27, 1960.
WATER TEMPERATURES: Maximum daily, 36.0°C June 5, 1969; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,320 microsiemens Aug. 8; minimum daily, 199 microsiemens Nov. 25.
WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 25, 30; minimum daily, 10.0°C Jan. 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT											
09...	1415	290	830	7.80	23.5	10	73	6.8	80	>0.4	1100
JAN											
14...	1450	427	990	8.00	13.0	7	15	9.0	85	6.3	180
FEB											
25...	1600	313	1210	8.00	18.5	10	18	9.3	99	1.6	150
APR											
23...	1130	225	1230	8.10	24.0	5	25	5.6	66	2.1	140
JUL											
16...	1000	468	1070	7.90	28.0	15	--	6.8	--	1.3	1000
SEP											
03...	1015	275	1120	8.20	29.0	--	68	6.8	--	1.3	180

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT											
09...	250	250	54	77	14	73	2	7.5	197	79	93
JAN											
14...	200	340	110	100	22	92	2	7.5	234	120	140
FEB											
25...	190	370	110	110	22	110	3	6.9	254	130	150
APR											
23...	K430	340	110	100	22	100	2	7.1	231	130	150
JUL											
16...	1500	370	110	110	22	96	2	6.5	257	120	130
SEP											
03...	250	330	94	95	21	99	2	6.5	231	120	130

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT											
09...	0.4	16	503	480	93	14	4.16	4.27	0.04	0.03	4.20
JAN											
14...	0.5	13	618	620	48	20	5.14	5.04	0.16	0.16	5.30
FEB											
25...	0.4	15	716	700	23	1	6.43	6.33	0.17	0.17	6.60
APR											
23...	0.5	17	705	670	50	12	5.46	5.57	0.04	0.03	5.50
JUL											
16...	0.4	16	688	650	180	22	5.12	5.05	0.08	0.05	5.20
SEP											
03...	0.4	12	630	630	--	--	4.88	4.88	0.02	0.02	4.90

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)
OCT 09...	4.30	0.11	0.05	0.69	0.8	1.10	1.30	0.96	2.9	4.5	98
JAN 14...	5.20	1.50	1.60	0.8	2.3	2.00	1.90	1.80	5.5	3.4	56
FEB 25...	6.50	0.17	0.15	0.73	0.9	2.30	2.30	2.20	6.7	4.7	38
APR 23...	5.60	0.04	0.04	0.86	0.9	2.20	2.10	2.00	6.1	14	66
JUL 16...	5.10	0.22	0.06	0.98	1.2	1.50	1.20	1.20	3.7	9.1	208
SEP 03...	4.90	0.04	0.06	0.96	1.0	1.80	1.60	1.50	4.6	--	121

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT 09...	77	99	20	4	100	<0.5	<1	<1	<3	1	<3
JAN 14...	65	75	10	2	80	<5	<10	<1	<30	1	<30
FEB 25...	32	95	--	--	--	--	--	--	--	--	--
APR 23...	40	93	--	--	--	--	--	--	--	--	--
JUL 16...	263	95	--	--	--	--	--	--	--	--	--
SEP 03...	90	95	<10	4	79	<0.5	<1	<1	<3	<1	4

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 09...	<1	30	<1	0.1	<10	6	<1	<1	790	7	9
JAN 14...	1	<40	<10	<0.1	<100	2	<1	<1	1200	<60	56
FEB 25...	--	--	--	--	--	--	--	--	--	--	--
APR 23...	--	--	--	--	--	--	--	--	--	--	--
JUL 16...	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	<5	36	<1	0.3	<10	4	<1	<11	1100	7	7

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	30470	552	317	26100	50	4110	53	4390	190
NOV. 1985	39725	481	276	29600	43	4650	46	4980	170
DEC. 1985	17370	885	515	24100	99	4660	92	4300	290
JAN. 1986	12978	1090	637	22300	130	4660	120	4070	340
FEB. 1986	12565	984	575	19500	120	3970	100	3530	310
MAR. 1986	8649	1210	709	16600	160	3680	130	3080	370
APR. 1986	7381	1190	701	14000	150	3080	130	2590	360
MAY 1986	13885	858	499	18700	95	3560	88	3310	280
JUNE 1986	87751	474	271	64300	40	9470	45	10600	170
JULY 1986	15840	1110	649	27700	140	5860	120	5070	350
AUG. 1986	7746	1250	739	15400	170	3510	140	2890	380
SEPT 1986	16071	767	445	19300	81	3520	78	3380	250
TOTAL	270431	**	**	298000	**	54700	**	52200	**
WTD.AVG.	741	703	408	**	75	**	72	**	230

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	461	858	423	1100	1120	1230	1220	1160	517	992	1220	1190
2	795	890	484	1080	1130	1230	1190	1140	510	1010	1210	1120
3	431	295	549	1100	1120	1210	1210	1160	452	1040	1220	1100
4	457	354	679	1090	1110	1180	1240	1070	392	1060	1250	1090
5	459	500	782	1080	1010	1220	1220	1020	394	1050	1280	977
6	553	511	856	1060	750	1240	1230	1070	375	1060	1220	938
7	693	543	898	1120	560	1230	1210	1100	282	1090	1280	927
8	789	588	933	1090	637	1220	1190	1080	270	1110	1320	762
9	852	682	958	1070	646	1210	1160	1050	300	1140	1310	653
10	960	805	981	1130	803	1220	1210	1020	403	1110	1290	440
11	994	853	990	1100	935	1210	1190	931	504	1120	1310	395
12	1030	958	1010	1040	1020	1210	1150	935	654	1090	1240	464
13	1040	992	668	1060	1110	1230	1140	1070	664	1090	1230	554
14	1030	1010	943	1070	1150	1220	1150	1030	600	1100	1220	584
15	1020	1030	992	1000	1160	1190	1220	1020	818	1120	1260	715
16	1010	1010	1010	1020	1170	1180	1200	1010	816	1130	1280	838
17	941	990	1030	1070	1170	1170	1180	940	832	1140	1290	882
18	753	1020	1060	1120	1180	1170	1220	865	844	1130	1300	948
19	477	1040	1070	1130	1190	1160	1200	791	774	1150	1280	990
20	550	1070	1090	1110	1190	1130	1200	638	726	1140	1260	996
21	560	1070	1080	1060	1210	1200	1220	726	402	1110	1270	1020
22	691	1050	1070	1080	1230	1210	1180	817	336	1140	1260	1040
23	289	1040	1060	1090	1220	1220	1190	919	436	1170	1270	1030
24	359	750	1090	1080	1190	1180	1190	1000	552	1160	1290	1010
25	392	199	1110	1090	1200	1170	1200	1020	746	1160	1280	1020
26	457	275	1120	1120	1220	1190	1190	1010	840	1170	1260	1050
27	534	805	1130	1090	1230	1230	1200	1070	898	1160	1230	1040
28	658	452	1120	1120	1220	1240	1170	1140	920	1140	1190	960
29	714	251	1120	1130	---	1230	1160	850	948	1150	1230	986
30	776	425	1110	1140	---	1220	1140	429	914	1210	1180	1010
31	835	---	1130	1130	---	1230	---	449	---	1230	1110	---
MEAN	695	744	953	1090	1070	1210	1190	953	604	1120	1250	891

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	21.0	18.5	14.5	19.5	19.0	24.0	26.0	27.0	31.0	30.5	28.0
2	23.0	18.0	15.5	16.0	20.0	19.5	24.0	24.5	27.5	32.0	30.5	31.0
3	24.0	22.0	13.5	16.0	21.0	21.5	22.5	25.0	27.0	29.5	32.0	30.5
4	24.0	16.0	15.0	17.0	21.0	20.0	24.0	24.5	26.5	31.0	30.5	29.0
5	23.0	18.0	15.0	19.5	20.0	21.0	23.0	25.5	26.5	32.0	29.0	30.0
6	24.0	18.0	14.5	14.5	20.0	21.5	25.0	27.0	29.5	31.0	28.5	29.0
7	23.0	17.0	16.0	14.5	19.5	19.5	26.0	27.5	27.0	29.5	29.0	27.5
8	25.0	20.0	17.5	10.5	17.0	20.5	27.0	27.0	26.5	30.0	29.0	26.5
9	26.0	21.0	18.0	10.0	14.0	19.0	23.0	26.0	27.0	31.0	30.0	29.0
10	22.0	22.0	19.0	10.5	13.0	23.5	21.5	25.0	28.0	31.5	30.5	28.0
11	28.0	23.0	15.5	13.0	12.5	24.0	23.5	26.5	29.0	31.0	31.0	27.0
12	27.0	24.0	12.5	14.0	12.0	24.0	23.0	28.0	27.0	29.0	29.5	27.5
13	28.0	24.0	10.5	14.0	12.0	21.5	26.5	28.0	29.0	29.0	29.0	29.5
14	28.0	25.0	11.0	14.0	17.0	21.5	25.0	27.0	29.0	30.0	31.0	29.0
15	26.0	26.0	11.5	14.5	18.0	19.0	24.5	26.0	29.0	30.0	30.0	28.0
16	25.0	21.0	13.5	15.5	19.5	19.5	23.0	26.5	30.0	29.0	29.0	30.0
17	26.0	21.0	12.5	16.0	20.0	22.0	23.0	28.0	30.0	30.5	30.0	29.5
18	27.0	23.0	14.5	17.5	23.0	24.0	23.0	26.5	28.5	31.0	30.5	30.5
19	26.0	24.0	13.0	18.0	23.0	21.0	25.0	26.0	30.0	28.0	32.5	29.0
20	25.0	23.0	15.0	16.5	21.0	20.0	24.5	26.5	30.0	28.5	30.5	28.0
21	24.0	19.0	14.0	18.0	18.5	20.0	25.0	26.0	29.0	29.5	31.5	28.0
22	25.0	20.0	15.5	17.0	17.0	20.0	25.5	28.0	29.0	29.0	29.0	28.0
23	24.0	20.0	16.5	15.0	18.5	19.0	26.0	29.0	29.0	31.0	28.0	28.0
24	25.0	22.5	13.5	16.0	19.0	21.0	26.5	29.0	28.0	32.0	29.0	30.0
25	26.0	23.0	12.0	19.5	19.5	19.0	25.0	28.0	29.0	33.0	31.0	27.5
26	25.0	23.5	12.0	16.5	20.0	22.5	24.5	27.0	30.0	29.5	30.0	28.5
27	24.0	21.5	14.5	15.5	21.0	22.5	26.0	28.0	30.5	30.0	30.5	28.5
28	22.0	19.5	15.0	17.0	19.5	19.5	27.0	28.0	30.0	29.0	28.5	28.5
29	22.0	19.0	16.0	18.0	---	21.0	26.5	28.0	31.5	29.0	29.0	28.0
30	21.0	21.5	16.0	18.5	---	21.0	26.0	27.0	30.0	33.0	30.0	29.5
31	21.0	---	17.5	19.0	---	22.5	---	25.5	---	32.0	29.0	---
MEAN	24.5	21.0	14.5	15.5	18.5	21.0	24.5	27.0	28.5	30.5	30.0	28.5

08188600 GUADALUPE-BLANCO RIVER AUTHORITY CALHOUN CANAL FLUME NO. 1 NEAR LONG MOTT, TX

LOCATION.--Lat 28°29'44", long 96°46'18", Calhoun County, Hydrologic Unit 12100204, on right bank at concrete Parshall flume No. 1, 518 ft upstream from State Highway 185, 1,900 ft downstream from pumping station on Goff Bayou, and 1.1 mi northwest of Long Mott.

PERIOD OF RECORD.--March 1968 to Feburary 1970 (monthly discharge only), March 1970 to current year.

GAGE.--Water-stage and velocity recorders, duplex water-stage recorder, and Parshall flume. Datum of gage is 23.53 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 6, 1981, deflection-vane recorder.

REMARKS.--No estimated daily discharges. Records fair. Flow is diverted from Guadalupe River 550 ft upstream from Guadalupe River near Tivoli (station 08188800), and then through a system of canals, Hog Bayou, and Goff Bayou, a distance of 8.9 mi to the pumping station on Goff Bayou 1,900 ft upstream from Flume No. 1.

COOPERATION.--Log of pumping station on Goff Bayou provided by Guadalupe-Blanco River Authority.

AVERAGE DISCHARGE.--18 years (water years 1969-86), 93.8 ft³/s (67,960 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 311 ft³/s July 7, 1968; no flow at times in 1968-74 and 1977-86.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	6.0	.00	32	16	16	198	176	89	159	135	112
2	46	15	.00	26	16	16	181	144	113	176	144	121
3	46	26	29	16	16	25	192	79	118	166	144	128
4	46	54	15	16	16	32	149	77	112	160	144	135
5	46	61	.00	16	16	32	112	91	112	168	159	155
6	46	55	.00	16	16	41	94	80	121	176	190	158
7	54	46	10	16	16	31	79	89	128	166	199	144
8	61	46	10	16	16	16	96	88	110	168	180	126
9	61	46	9.0	30	16	16	109	70	74	176	162	111
10	61	39	15	37	5.3	23	126	56	64	166	144	128
11	54	25	21	16	.00	32	128	48	79	152	127	122
12	46	15	55	16	.00	32	98	84	96	144	112	116
13	46	15	34	34	.00	32	80	119	87	144	112	128
14	46	26	15	48	.00	32	111	148	63	153	120	128
15	46	38	15	48	8.0	32	158	145	59	150	128	135
16	46	46	38	31	16	32	176	144	75	137	128	135
17	46	46	52	16	34	41	163	135	104	143	128	128
18	46	46	28	16	48	70	144	128	119	134	128	118
19	46	46	26	16	48	69	124	128	117	128	142	104
20	46	64	22	22	35	72	79	128	116	120	176	96
21	68	51	15	32	16	88	111	137	128	120	187	104
22	80	22	15	32	16	80	126	163	128	138	171	112
23	61	15	15	32	16	71	96	164	128	144	133	112
24	44	15	15	32	42	64	114	144	130	125	112	112
25	40	15	15	32	64	84	118	151	120	96	112	112
26	46	15	15	32	64	117	108	160	112	80	112	107
27	46	10	15	32	44	119	96	106	107	80	112	96
28	27	.00	15	32	24	112	108	69	102	80	122	96
29	.00	.00	15	32	---	112	154	89	115	98	128	96
30	.00	.00	23	32	---	118	143	87	136	112	121	96
31	.00	---	29	25	---	184	---	80	---	117	112	---
TOTAL	1393.00	904.00	581.00	829	624.30	1841	3771	3507	3162	4276	4324	3571
MEAN	44.9	30.1	18.7	26.7	22.3	59.4	126	113	105	138	139	119
MAX	80	64	55	48	64	184	198	176	136	176	199	158
MIN	.00	.00	.00	16	.00	16	79	48	59	80	112	96
AC-FT	2760	1790	1150	1640	1240	3650	7480	6960	6270	8480	8580	7080

CAL YR 1985 TOTAL 24178.00 MEAN 66.2 MAX 213 MIN .00 AC-FT 47960

WTR YR 1986 TOTAL 28783.30 MEAN 78.9 MAX 199 MIN .00 AC-FT 57090

08188750 GUADALUPE-BLANCO RIVER AUTHORITY CALHOUN CANAL FLUME NO. 2 NEAR LONG MOTT, TX

LOCATION.--Lat 28°30'09", long 96°45'40", Calhoun County, Hydrologic Unit 12100204, on left bank at concrete Parshall flume No. 2, 3,700 ft downstream from State Highway 185, 4,200 ft downstream from streamflow station 08188600, and 1.4 mi north of Long Mott.

PERIOD OF RECORD.--October 1971 to June 1972 (monthly discharge only), July 1972 to March 1986 (discontinued).

GAGE.--Water-stage and velocity recorders, water-stage recorder, and Parshall flume. Datum of gage is 22.37 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 6, 1981, deflection-vane recorders.

REMARKS.--No estimated daily discharges. Records poor. Flow is diverted from Guadalupe River 550 ft upstream from Guadalupe River near Tivoli (station 08188800), and then through a system of canals, Hog Bayou, and Goff Bayou, a distance of 8.9 mi to the pumping station on Goff Bayou 1,900 ft upstream from flume No. 1.

COOPERATION.--Log of pumping station on Goff Bayou provided by Guadalupe-Blanco River Authority.

AVERAGE DISCHARGE.--14 years, 75.2 ft³/s (54,480 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 282 ft³/s June 23, 1975; no flow at times in 1972-86.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO MARCH 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	6.0	.00	16	.00	.00						
2	30	15	.00	9.0	.00	.00						
3	30	26	.00	.00	.00	9.0						
4	30	45	.00	.00	.00	16						
5	30	46	.00	.00	.00	16						
6	30	40	.00	.00	.00	25						
7	39	30	.00	.00	.00	15						
8	46	30	.00	.00	.00	.00						
9	46	30	9.0	14	.00	.00						
10	46	24	15	21	.00	7.3						
11	39	10	15	.00	.00	16						
12	30	.00	40	.00	.00	16						
13	30	.00	19	18	.00	16						
14	30	.00	15	32	.00	16						
15	30	15	15	32	8.0	16						
16	30	30	38	15	16	16						
17	30	30	52	.00	25	25						
18	30	30	28	.00	32	55						
19	30	30	15	.00	32	53						
20	30	58	7.0	6.7	19	57						
21	53	51	.00	16	.00	65						
22	65	22	.00	16	.00	64						
23	46	15	.00	16	.00	55						
24	29	15	.00	16	26	48						
25	25	15	.00	16	48	69						
26	31	15	.00	16	48	101						
27	32	10	.00	16	29	103						
28	18	.00	.00	16	7.5	96						
29	.00	.00	.00	16	---	96						
30	.00	.00	8.0	16	---	102						
31	.00	---	15	9.7	---	168						
TOTAL	965.00	638.00	291.00	333.40	290.50	1341.30						
MEAN	31.1	21.3	9.39	10.8	10.4	43.3						
MAX	65	58	52	32	48	168						
MIN	.00	.00	.00	.00	.00	.00						
AC-FT	1910	1270	577	661	576	2660						

CAL YR 1985 TOTAL 20045.00 MEAN 54.9 MAX 199 MIN .00 AC-FT 39760
WTR YR 1986 TOTAL - MEAN - MAX - MIN - AC-FT -

08188800 GUADALUPE RIVER NEAR TIVOLI, TX

LOCATION.--Lat 28°30'20", long 96°53'04", Calhoun-Refugio County line, Hydrologic Unit 12100204, on right bank at diversion and saltwater barrier, one orifice located upstream and one downstream, 550 ft downstream from Calhoun County Irrigation Canal intake, 0.4 mi downstream from San Antonio River, 3.5 mi north of Tivoli, and at mile 10.2. Water-quality sampling site on left bank 474 ft upstream.

DRAINAGE AREA.--10,128 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1965 to current year.

REVISED RECORDS.--WDR TX-68-1: Drainage area.

GAGE.--Duplex water-stage recorder. Datum of gage is 0.04 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Many small diversions above station. Some regulation by powerplants. Upstream regulation same as that for Guadalupe River at Cuero (station 08175800) and San Antonio River at Goliad (station 08188500).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (upstream from barrier), 13.7 ft Sept. 22, 1967; minimum, 1.2 ft July 2, 1984. Maximum gage height (downstream from barrier), 13.6 ft Sept. 22, 1967; minimum, 0.5 ft July 12, 14, 1967.

Maximum stage since at least 1936, that of Sept. 22, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1936 reached a stage of 11 ft, present site and datum. Levees along the Navigation Canal from San Antonio Bay to Victoria were built in 1961 thus decreasing the flood plain.

EXTREMES FOR CURRENT YEAR.--Maximum gage height (upstream from barrier), 8.4 ft June 13; minimum, 2.6 ft Aug. 3. Maximum gage height (downstream from barrier), 8.1 ft Nov. 27, 28, June 13; minimum, 2.0 ft Aug. 19-21.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	6.3	6.1	b7.1	7.0	b8.2	8.0	6.2	6.0	5.0	5.0	5.0	4.8
2	6.6	6.4	b7.2	7.1	8.2	8.0	6.2	6.0	5.0	4.9	4.7	4.6
3	6.7	6.6	b7.2	7.1	8.1	8.0	6.2	6.1	5.0	4.9	4.6	4.5
4	6.7	6.7	7.8	7.7	7.9	7.7	6.2	6.1	5.1	4.9	4.4	4.4
5	6.2	6.1	8.0	7.9	7.7	7.6	6.1	6.0	5.8	5.6	4.4	4.2
6	5.1	5.0	8.0	7.9	7.6	7.4	6.0	6.0	6.1	6.1	4.3	4.2
7	4.4	4.2	7.9	7.7	7.5	7.3	6.0	6.0	7.0	6.9	4.5	4.4
8	3.9	3.8	7.4	7.3	7.3	7.2	6.0	5.9	7.2	7.1	4.6	4.5
9	3.9	3.8	7.0	6.8	7.2	7.1	6.0	5.8	7.2	7.1	4.6	4.6
10	4.0	3.9	6.7	6.6	7.2	7.0	6.0	5.8	6.8	6.8	4.6	4.5
11	3.9	3.7	6.5	6.4	7.4	7.3	6.0	5.7	6.4	6.4	4.6	4.6
12	3.8	3.7	6.4	6.3	7.3	7.2	5.9	5.7	6.2	6.2	4.6	4.6
13	3.5	3.4	6.4	6.3	7.2	7.2	6.0	5.8	6.1	6.1	4.5	4.4
14	3.5	3.4	6.3	6.2	7.2	7.1	6.0	5.8	6.0	6.0	4.4	4.3
15	3.5	3.4	6.2	6.1	7.2	7.0	6.0	5.8	5.9	5.9	4.4	4.3
16	3.1	3.1	6.0	5.9	7.0	6.9	5.8	5.7	5.8	5.7	4.4	4.3
17	3.5	3.4	6.0	5.9	7.0	6.9	5.8	5.7	5.7	5.6	4.5	-
18	4.7	4.6	6.1	6.0	6.9	6.9	5.7	5.6	5.7	5.5	4.6	-
19	5.9	5.8	6.1	6.0	6.8	6.8	5.7	5.5	5.6	5.5	4.2	-
20	5.8	5.7	5.9	5.8	6.8	6.7	6.1	6.0	5.5	5.4	3.9	-
21	5.0	4.9	5.8	5.7	6.7	6.7	6.2	6.0	5.4	5.3	3.9	-
22	5.5	5.4	b5.8	5.6	6.6	6.6	6.2	6.0	5.3	5.3	3.7	-
23	7.3	7.2	b5.9	5.8	6.6	6.5	6.2	6.1	5.3	5.2	3.7	-
24	7.9	7.7	b5.9	5.8	b6.6	6.5	6.1	6.0	5.[illegible]	5.2	3.7	-
25	8.1	7.9	b6.5	6.1	6.5	6.4	5.9	5.8	5.2	5.2	3.7	-
26	8.1	7.9	b7.8	7.6	6.5	6.3	5.7	5.7	5.2	5.1	3.6	3.4
27	8.0	7.8	b8.2	8.1	6.4	6.2	5.6	5.5	5.1	5.0	3.6	3.4
28	7.6	7.5	b8.2	8.1	6.2	6.1	5.5	5.4	5.0	4.9	3.5	3.4
29	7.3	7.2	b8.1	8.0	6.2	6.1	5.3	5.2	---	---	3.4	3.3
30	7.2	7.0	b8.2	8.0	6.2	6.1	5.2	5.1	---	---	3.5	3.4
31	7.0	6.8	---	--	6.2	6.0	5.1	5.0	---	---	3.5	3.4
MAX	8.1	7.9	8.2	8.1	8.2	8.0	6.2	6.1	7.2	7.1	5.0	-
MIN	3.1	3.1	5.8	5.6	6.2	6.0	5.1	5.0	5.0	4.9	3.4	-

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	3.5	3.4	3.4	3.4	7.1	6.9	7.0	6.9	2.8	2.7	3.7	2.6
2	3.7	3.5	3.1	3.1	7.0	6.8	6.8	6.7	2.8	2.7	3.7	2.8
3	4.0	3.9	3.3	3.3	7.2	7.0	6.6	6.5	2.6	2.6	3.8	2.8
4	4.0	3.9	3.5	3.5	7.8	7.7	6.5	6.3	4.2	2.5	4.0	2.8
5	4.0	3.9	3.9	3.9	8.0	7.8	6.4	6.2	3.8	2.6	4.0	2.8
6	3.9	3.8	3.9	3.8	8.0	7.8	6.2	6.1	3.8	2.7	3.7	3.0
7	3.9	3.7	3.9	3.8	8.0	7.8	6.1	5.9	3.8	2.9	3.7	3.1
8	3.7	3.6	3.9	3.9	8.1	7.9	5.9	5.7	3.7	2.9	3.7	3.1
9	3.5	3.4	3.8	3.8	8.1	7.9	5.8	5.6	3.7	2.5	3.8	3.2
10	3.7	3.6	3.8	3.7	8.1	8.0	5.7	5.5	3.7	2.5	6.3	6.3
11	3.9	3.8	3.9	3.8	8.2	8.0	5.5	5.3	3.7	2.6	7.7	6.8
12	3.8	3.8	4.0	3.9	8.2	8.0	5.4	5.2	3.7	2.4	7.1	6.9
13	3.8	3.8	5.5	5.3	8.4	8.1	5.1	4.9	3.7	2.5	6.8	6.8
14	3.9	3.8	6.1	5.8	8.2	8.0	5.0	4.8	3.7	2.7	6.1	6.0
15	3.6	3.5	6.3	6.0	8.1	7.9	4.8	4.6	3.7	2.8	5.6	5.6
16	3.5	3.4	6.4	6.1	8.0	7.8	4.6	4.4	3.7	2.7	5.6	5.5
17	3.5	3.4	6.5	6.1	7.9	7.7	4.4	4.2	3.7	2.4	5.4	5.3
18	3.6	3.5	6.0	5.9	7.8	7.6	4.1	3.9	3.7	2.3	5.1	5.0
19	3.6	3.6	6.0	5.9	7.7	7.6	4.1	3.9	3.7	2.0	4.8	4.7
20	3.5	3.4	6.0	5.9	7.7	7.6	4.1	3.9	3.7	2.0	4.8	4.6
21	3.2	3.2	6.2	6.1	7.8	7.7	4.0	3.9	3.7	2.0	4.7	4.6
22	3.2	3.1	6.2	6.1	8.0	7.8	3.8	3.7	3.7	2.2	4.7	4.6
23	3.3	3.2	6.1	6.1	8.0	7.9	3.6	3.5	3.7	2.4	4.8	4.6
24	3.2	3.2	6.0	6.0	8.1	8.0	3.5	3.4	3.7	2.4	5.0	4.9
25	3.3	3.2	5.7	5.7	8.1	8.0	3.5	3.4	3.8	2.4	5.0	5.0
26	3.5	3.4	5.4	5.4	7.9	7.8	3.4	3.4	3.7	2.4	5.0	5.0
27	3.4	3.3	5.2	5.1	7.7	7.6	3.4	3.3	3.8	2.2	5.0	5.0
28	3.3	3.3	5.1	5.0	7.5	7.3	3.3	3.2	3.7	2.2	5.1	5.0
29	3.3	3.3	5.3	5.1	7.4	7.2	3.2	3.1	3.7	2.4	5.1	5.0
30	3.4	3.4	6.5	6.2	7.2	7.0	3.0	3.0	3.8	2.8	5.0	5.0
31	---	---	7.0	6.7	---	---	2.8	3.8	3.7	2.5	---	---
MAX	4.0	3.9	7.0	6.7	8.4	8.1	7.0	6.9	4.2	2.9	7.1	6.9
MIN	3.2	3.1	3.1	3.1	7.0	6.8	2.8	2.8	2.6	2.0	3.7	2.6

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1965 to current year. Chemical and biochemcial analyses: January 1968 to current year. Pesticide analyses: October 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1965 to October 1982.
WATER TEMPERATURES: October 1965 to October 1982.

INSTRUMENTATON.--Beginning July 1965, specific conductance was recorded continuously at this station. Beginning March 1981, water temperature was recorded continuously at this station. Continuous recording of specific conductance and water temperature was discontinued October 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,000 microsiemens June 1, 1971, Aug. 3, 1978; minimum daily, 159 microsiemens Apr. 28, 1980.
WATER TEMPERATURES (1966-69, 1981-82): Maximum daily, 32.0°C on many days during summer months; minimum daily 8.0°C Jan. 15, 1968.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3
NOV 22...	1120	614	8.00	19.0	10	37	8.0	86	2.0	250	25
JAN 10...	1100	688	8.43	10.5	5	16	9.3	82	3.5	260	27
FEB 25...	1647	750	8.00	18.0	10	29	9.5	100	1.3	290	41
APR 23...	1710	784	8.20	24.0	5	8.2	7.8	95	4.0	280	45
JUN 18...	1020	608	7.40	28.5	30	74	5.2	--	7.9	210	33
AUG 20...	1430	720	8.00	31.5	5	35	7.0	--	0.9	270	50

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
NOV 22...	73	16	37	1	3.4	223	39	47	0.3	13	360
JAN 10...	78	17	39	1	3.2	238	35	56	0.3	11	380
FEB 25...	87	18	49	1	2.2	250	52	65	0.3	6.4	430
APR 23...	83	18	49	1	4.2	236	55	75	0.3	13	440
JUN 18...	64	12	39	1	6.5	176	52	49	0.3	15	340
AUG 20...	78	19	58	2	4.2	223	63	83	0.3	14	450

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
NOV 22...	150	27	1.66	0.04	1.70	0.22	1.2	1.4	0.41	32	--
JAN 10...	33	14	1.98	0.02	2.00	0.18	1.4	1.6	0.54	1.7	1
FEB 25...	54	5	2.08	0.02	2.10	0.09	1.0	1.1	0.44	6.4	--
APR 23...	75	16	2.07	0.03	2.10	0.06	0.64	0.7	0.85	3.9	--
JUN 18...	371	37	1.48	0.02	1.50	0.20	2.0	2.2	0.46	13	--
AUG 20...	65	7	1.38	0.02	1.40	0.13	0.67	0.8	0.49	4.8	3

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV											
22...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	78	<1	<10	1	8	1	5	<0.1	<1	<1	12
FEB											
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
18...	--	--	--	--	--	--	--	--	--	--	--
AUG											
20...	110	<1	<10	6	4	<5	4	<0.1	<1	<1	75

08189200 COPANO CREEK NEAR REFUGIO, TX

LOCATION.--Lat 28°18'12", long 97°06'44", Refugio County, Hydrologic Unit 12100405, on right bank at bridge on Farm Road 774, 3.6 mi upstream from Alameda Creek, 8.1 mi east of Refugio, and 11.9 mi upstream from mouth.

DRAINAGE AREA.--87.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 17.25 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known diversion above station. Recording rain gage at station.

AVERAGE DISCHARGE.--16 years, 48.5 ft³/s (7.50 in/yr), 35,140 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,300 ft³/s Sept. 12, 1971 (gage height, 21.00 ft), from rating curve extended above 3,800 ft³/s; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1921, 22 ft in September 1967, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 12	1100	*118	*3.34				

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	16	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	7.2	70	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	1.8	49	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.33	21	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.02	9.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	7.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	8.2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	11	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	9.8	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00
11	.00	5.4	15	.00	.00	.00	.00	.92	.00	.00	.00	.00
12	.00	4.8	109	.00	.00	.00	.00	1.8	.00	.00	.00	.00
13	.00	3.5	84	.00	.00	.00	.00	.49	.00	.00	.00	.00
14	.00	2.5	46	.00	.00	.00	.00	.04	.00	.00	.00	.00
15	.00	1.6	20	.00	.00	.00	.00	.00	.16	.00	.00	.00
16	.00	1.0	8.4	.00	.00	.00	.00	.00	.07	.00	.00	.00
17	.00	.80	6.3	.00	.00	.00	.00	.00	.01	.00	.00	.00
18	.00	.65	4.8	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.52	3.6	.43	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.32	2.6	.46	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.25	1.8	.22	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.23	1.3	.08	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.17	.89	.02	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.14	.53	.01	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.11	.30	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.06	.16	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.09	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.13	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.08	.02	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.06	.01	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	50.35	233.81	304.95	1.23	.00	.00	.00	3.75	.24	.00	.00	.00
MEAN	1.62	7.79	9.84	.04	.00	.00	.00	.12	.01	.00	.00	.00
MAX	41	70	109	.46	.00	.00	.00	1.8	.16	.00	.00	.00
MIN	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.02	.09	.11	.00	.00	.00	.00	.00	.00	.00	.00	.00
IN.	.02	.10	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	100	464	605	2.4	.00	.00	.00	7.4	.5	.00	.00	.00

CAL YR 1985 TOTAL 5764.32 MEAN 15.8 MAX 681 MIN .00 CFSM .18 IN. 2.44 AC-FT 11430
WTR YR 1986 TOTAL 594.33 MEAN 1.63 MAX 109 MIN .00 CFSM .02 IN. .25 AC-FT 1180

08189200 COPANO CREEK NEAR REFUGIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: June 1970 to current year. Pesticide analyses: July 1970 to July 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)
NOV										
20...	1515	0.31	292	7.80	18.5	44	4.0	42	2.7	98

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
NOV										
20...	0	31	4.9	18	0.8	10	112	13	17	0.2

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV										
20...	33	190	34	<0.01	<0.10	0.03	1.7	1.7	0.19	12

08189500 MISSION RIVER AT REFUGIO, TX

LOCATION.--Lat 28°17'30", long 97°16'44", Refugio County, Hydrologic Unit 12100406, on left bank at upstream side of upstream bridge of two bridges on U.S. Highway 77, 560 ft upstream from Missouri Pacific Railroad Co. bridge, and 0.2 mi southwest of Refugio.

DRAINAGE AREA.--690 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1939 to current year.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.00 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 25, 1958, nonrecording gage at site 59 ft downstream at same datum. Nov. 26, 1958, to Apr. 18, 1963, non-recording gage at present site and datum.

REMARKS.--Estimated daily discharges: July 15 to Aug. 6 and Sept. 22-30. Records good. There are several small diversions above station.

AVERAGE DISCHARGE.--47 years, 119 ft^3/s (2.34 in/yr), 86,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,000 ft^3/s Sept. 12, 1971 (gage height, 38.25 ft); minimum observed, 0.7 ft^3/s Oct. 7, 9, 1940, Aug. 18-20, Sept. 5, 1945, Dec. 29, 31, 1949, Jan. 1, 1950, July 13, Aug. 28, 1963, July 18, 19, 22-26, 31, Aug. 1, 2, 1971.

Maximum stage since about 1899, that of Sept. 12, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in August 1914 and May 17, 1938, reached a stage of 32.3 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 1	0300	*2,320	*17.47				

Minimum daily discharge, 1.0 ft^3/s Sept. 26-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1670	16	33	13	5.5	4.7	3.9	3.5	58	4.1	1.6	2.4
2	385	16	30	13	5.2	4.4	4.2	3.5	34	4.0	1.6	2.3
3	115	18	24	13	5.5	4.8	4.3	19	21	3.8	1.6	2.0
4	62	15	21	13	10	5.1	4.8	5.8	82	3.3	1.6	2.0
5	40	13	19	12	12	5.2	5.3	4.0	71	3.1	1.6	4.3
6	29	11	17	12	19	4.8	5.4	3.9	31	2.9	365	2.6
7	24	11	16	11	17	4.7	5.5	3.7	31	2.4	511	2.0
8	21	11	15	14	12	4.5	5.5	3.5	27	2.4	118	2.1
9	19	11	15	13	11	4.2	5.7	3.1	20	2.4	37	2.7
10	17	11	15	15	10	4.4	5.5	34	18	2.4	20	2.7
11	16	11	31	16	8.7	4.6	5.4	36	41	2.4	13	2.4
12	15	66	16	15	8.3	5.7	4.7	74	136	2.2	8.4	2.3
13	15	45	16	14	7.9	6.9	4.2	38	185	2.2	7.0	2.0
14	14	23	16	13	7.9	5.7	3.8	21	95	2.2	5.6	2.2
15	15	18	15	13	7.9	5.2	3.8	15	104	2.2	5.9	1.7
16	14	14	15	13	7.2	4.5	3.8	11	56	2.0	6.3	1.6
17	15	13	15	18	7.4	3.8	3.4	10	32	2.0	4.7	1.5
18	14	13	15	13	7.6	3.9	3.3	9.4	22	2.0	4.0	1.4
19	13	13	14	13	7.3	3.7	3.3	11	20	1.9	3.3	1.7
20	13	12	14	10	6.9	3.8	4.6	7.0	23	1.9	2.9	1.3
21	13	11	13	7.2	6.7	3.8	4.0	5.3	29	1.9	4.2	1.4
22	14	11	13	7.2	5.9	3.4	3.9	4.8	20	1.8	4.3	1.2
23	13	11	13	6.8	5.2	3.0	3.9	3.8	29	1.8	4.8	1.2
24	12	13	13	6.8	5.5	2.9	3.5	3.5	78	1.8	3.5	1.1
25	12	16	13	6.7	6.6	3.0	3.1	3.3	27	1.8	3.0	1.1
26	12	17	13	5.6	7.3	3.3	2.8	3.4	14	1.7	2.3	1.0
27	11	37	13	5.5	7.7	3.5	2.7	3.6	8.3	1.7	2.2	1.0
28	11	36	13	5.5	5.5	3.4	2.7	11	5.8	1.7	2.2	1.0
29	11	31	13	5.5	---	3.2	2.7	10	4.8	1.7	2.0	1.2
30	12	27	13	5.5	---	3.5	3.4	6.7	4.3	1.7	2.0	1.2
31	13	---	13	5.5	---	3.7	---	8.3	---	1.7	2.0	---
TOTAL	2660	571	515	334.8	234.7	131.3	123.1	380.1	1327.2	71.1	1152.6	54.6
MEAN	85.8	19.0	16.6	10.8	8.38	4.24	4.10	12.3	44.2	2.29	37.2	1.82
MAX	1670	66	33	18	19	6.9	5.7	74	185	4.1	511	4.3
MIN	11	11	13	5.5	5.2	2.9	2.7	3.1	4.3	1.7	1.6	1.0
CFSM	.12	.03	.02	.02	.01	.01	.01	.02	.06	.00	.05	.00
IN.	.14	.03	.03	.02	.01	.01	.01	.02	.07	.00	.06	.00
AC-FT	5280	1130	1020	664	466	260	244	754	2630	141	2290	108

CAL YR 1985 TOTAL 28862.7 MEAN 79.1 MAX 4840 MIN 2.2 CFSM .11 IN. 1.56 AC-FT 57250
WTR YR 1986 TOTAL 7555.5 MEAN 20.7 MAX 1670 MIN 1.0 CFSM .03 IN. .41 AC-FT 14990

08189500 MISSION RIVER AT REFUGIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1961 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: October 1970 to April 1979. Sediment analyses: January 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1961 to September 1981.
WATER TEMPERATURES: September 1961 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 100,000 microsiemens Nov. 28, 1965; minimum daily, 85 microsiemens Sept. 13, 1971.
WATER TEMPERATURES: Maximum daily, 39.0°C June 20, 1981; minimum daily, 0.0°C Jan. 18, 1977.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT 09...	1800	19	1380	7.80	25.5	19	7.0	85	>1.2	240	260	290
JAN 15...	1040	13	2400	7.80	11.5	8.0	10.3	94	1.0	130	120	490
APR 22...	1545	3.7	3320	7.90	25.5	10	8.5	104	1.8	62	550	560
SEP 03...	1320	2.0	3920	7.80	30.0	10	7.5	--	1.7	200	120	640

DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT 09...	82	89	17	160	4	4.6	212	36	290	0.3	30	820
JAN 15...	220	150	27	370	8	3.4	272	58	600	0.4	36	1390
APR 22...	330	160	40	450	9	4.6	239	66	890	0.3	39	1880
SEP 03...	430	190	40	550	10	6.0	217	51	1100	0.3	29	2520

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
OCT 09...	760	0.21	0.01	0.22	0.10	0.09	0.5	0.6	0.03	0.01	0.01	0.03
JAN 15...	1400	--	<0.01	<0.10	0.04	0.04	0.36	0.4	0.02	<0.01	0.01	0.03
APR 22...	1800	--	<0.01	<0.10	0.05	0.06	0.45	0.5	0.03	0.01	<0.01	--
SEP 03...	2100	--	<0.01	<0.10	0.06	0.04	1.2	1.3	0.03	0.01	<0.01	--

DATE	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 09...	20	1.0	99	10	9	450	<0.5	<1	<1	<3	1	6
JAN 15...	69	2.4	70	<10	6	600	<10	<1	<1	<1	1	30
APR 22...	102	1.0	38	--	--	--	--	--	--	--	--	--
SEP 03...	17	0.09	99	<10	5	1100	<10	<1	<1	7	3	40

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 09...	<1	29	36	<0.1	<10	4	<1	<1	1100	9	5
JAN 15...	<1	50	100	0.1	4	4	<1	3	2200	22	10
APR 22...	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	5	90	130	0.1	5	<1	<1	7	4000	35	30

08189700 ARANSAS RIVER NEAR SKIDMORE, TX

LOCATION.--Lat 28°16'56", long 97°37'14", Bee County, Hydrologic Unit 12100407, on right bank 160 ft downstream from centerline of county road bridge, 3.8 mi downstream from confluence of West Aransas and Poesta Creeks, and 4.4 mi northeast of Skidmore.

DRAINAGE AREA.--247 mi^2.

PERIOD OF RECORD.--March 1964 to current year.
Water-quality records: Chemical analyses: October 1965 to September 1966. Sediment records: February 1966 to September 1975.

GAGE.--Water-stage recorder. Datum of gage is 72.37 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Apr. 15-17. Records good. No known diversion. Chase Field Naval Air Station and the city of Beeville discharge sewage effluent into the stream via Poesta Creek.

AVERAGE DISCHARGE.--22 years, 38.9 ft^{3}s (2.14 in/yr), 28,180 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,800 ft^3/s Sept. 22, 1967 (gage height, 42.22 ft, from floodmark), from rating curve extended above 14,000 ft^3/s on basis of slope-area measurements of 29,600 and 82,800 ft^3/s; no flow at times in 1964-67, 1971, and 1986.
Maximum stage since at least 1914, that of Sept. 22, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1954 reached a stage of 33 ft (discharge, 19,600 ft^3/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 4	1400	*395	*7.89				

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	.40	1.1	1.3	1.3	.49	1.5	4.3	12	.36	.00	.04
2	3.6	.87	.85	1.2	1.3	.30	1.3	5.8	6.7	.19	.00	.03
3	1.6	1.5	.70	1.2	1.5	.53	1.3	4.6	4.7	.16	.00	.07
4	1.0	1.8	.70	1.3	182	.71	1.8	5.0	3.5	.10	.00	.03
5	.60	.94	.66	1.6	61	.72	1.8	5.2	3.5	.09	.04	.03
6	.30	.66	.67	1.2	14	.79	1.9	7.4	24	.05	1.2	23
7	.27	.61	.60	1.1	5.5	.79	1.9	5.0	20	.00	1.7	18
8	.18	.61	.53	1.9	3.1	.97	2.0	3.6	9.1	.00	1.6	20
9	.43	.70	.54	7.7	2.0	.99	1.9	3.2	5.9	.00	1.7	11
10	.67	.70	.70	8.0	1.3	1.1	1.7	3.4	4.2	.00	.91	24
11	1.7	1.1	.99	2.3	1.1	1.5	1.8	10	3.3	.00	.47	11
12	.96	1.2	1.2	1.4	.91	1.2	1.6	11	50	.00	.24	5.9
13	.60	1.8	2.5	1.3	.74	2.2	1.8	5.2	31	.00	1.4	4.1
14	.73	1.3	1.6	1.1	.70	3.3	1.7	3.9	13	.00	4.8	3.0
15	1.0	1.5	1.0	1.1	.70	2.2	1.7	3.8	13	.00	3.1	2.3
16	4.3	1.6	.99	.89	.79	1.4	1.7	3.3	4.8	.00	1.6	1.9
17	5.9	1.1	.95	.90	.82	1.4	1.8	3.2	2.1	.00	5.3	1.8
18	1.7	.89	.90	.99	.69	1.3	1.9	3.4	1.2	.00	4.6	1.7
19	1.1	.89	.99	.99	.57	1.2	1.8	3.2	8.0	.00	2.2	1.4
20	26	.84	.90	.93	.30	1.1	1.8	2.6	3.0	.00	1.1	1.3
21	16	.81	.89	.99	.30	.99	1.8	2.1	1.0	.00	.51	1.3
22	5.8	.89	.89	1.1	.38	1.0	1.7	1.7	.53	.00	.42	1.3
23	3.5	.81	.98	1.2	.37	1.1	1.8	1.7	.71	.00	.36	1.3
24	1.9	.80	1.2	1.2	.30	1.1	2.0	1.6	1.1	.00	.30	[illegible]
25	1.3	4.8	1.7	1.2	.30	1.3	2.1	1.5	1.6	.00	.30	.71
26	.93	2.9	1.7	1.2	.32	1.9	1.9	1.9	4.7	.00	.29	.70
27	.75	1.8	1.7	1.2	.55	1.6	1.7	7.7	1.7	.00	.17	.70
28	.57	3.1	1.4	1.2	.49	1.2	1.8	6.2	1.0	.00	.06	.80
29	.45	5.1	1.1	1.1	---	1.0	1.8	3.9	.61	.00	.06	1.4
30	.26	1.8	1.6	1.1	---	1.7	2.4	3.2	.59	.00	.02	1.4
31	.18	---	1.7	1.2	---	1.7	---	4.3	---	.00	.00	---
TOTAL	98.28	43.82	33.93	51.09	283.33	38.78	53.7	132.9	236.54	.95	34.45	141.16
MEAN	3.17	1.46	1.09	1.65	10.1	1.25	1.79	4.29	7.88	.03	1.11	4.71
MAX	26	5.1	2.5	8.0	182	3.3	2.4	11	50	.36	5.3	24
MIN	.18	.40	.53	.89	.30	.30	1.3	1.5	.53	.00	.00	.03
CFSM	.01	.01	.00	.01	.04	.01	.01	.02	.03	.00	.00	.02
IN.	.01	.01	.01	.01	.04	.01	.01	.02	.04	.00	.01	.02
AC-FT	195	87	67	101	562	77	107	264	469	1.9	68	280

CAL YR 1985 TOTAL 7930.54 MEAN 21.7 MAX 3390 MIN .07 CFSM .09 IN. 1.19 AC-FT 15730
WTR YR 1986 TOTAL 1148.93 MEAN 3.15 MAX 182 MIN .00 CFSM .01 IN. .17 AC-FT 2280

08189800 CHILTIPIN CREEK AT SINTON, TX

LOCATION.--Lat 28°02'48", long 97°30'13", San Patricio County, Hydrologic Unit 12100407, on left bank at upstream end of bridge on U.S. Highway 77, 0.2 mi upstream from Missouri Pacific Railroad Co. bridge, and 0.8 mi northeast of Sinton.

DRAINAGE AREA.--128 mi^2.

PERIOD OF RECORD.--July 1970 to current year.

REVISED RECORDS.--WDR TX-72-1: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 16.74 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 23, 1985, at datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: Aug. 1-21. Records poor. No known diversions above station. An undetermined amount of water from oilfield operations enters the stream upstream at various points.

AVERAGE DISCHARGE.--16 years, 48.0 ft^3/s (5.09), 34,780 acre-ft/yr. The figure published in the 1985 report was in error; the correct figure is 5.41 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,800 ft^3/s Apr. 11, 1985 (gage height, 29.45 ft); maximum gage height, 31.10 ft Sept. 12, 1971, present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since 1910, 32.27 ft Sept. 22, 1967, and 30.8 ft in April 1930, present datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 12	0400	*200	*5.59				

Minimum daily discharge, no flow Apr. 25-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	7.4	8.2	.43	.06	.02	.08	.05	.24	.13	.04	.54
2	4.0	6.5	4.6	.36	.05	.03	.08	.02	.07	.01	.02	.53
3	6.7	11	3.4	.31	.12	.06	.05	.01	.05	.03	.01	.36
4	9.8	7.0	3.0	.26	1.7	.23	.11	.24	.02	.01	.01	.34
5	6.4	5.7	2.6	.23	.16	.05	.11	.08	.27	.24	.54	.18
6	5.5	4.5	2.3	.15	.03	.03	.05	.02	1.0	.03	.98	.13
7	5.6	4.0	2.3	.15	.03	.05	.03	.02	2.3	.01	.72	.78
8	5.4	9.2	2.0	1.8	.08	.04	.02	.03	.83	.02	.96	.30
9	6.8	6.9	1.9	.37	.08	.07	.02	.02	.28	.02	.60	.17
10	5.1	7.0	1.9	.08	.08	.07	.01	1.3	.07	.01	.30	.10
11	11	12	3.1	.03	.04	.05	.01	.38	26	.01	.14	.10
12	12	5.6	1.8	.03	.03	.11	.01	.12	131	.02	.37	.08
13	6.8	7.3	1.5	.06	.04	.18	.01	.05	22	.02	2.7	.08
14	10	7.2	1.1	.05	.11	.16	.01	.03	12	.02	1.9	.05
15	13	16	1.0	.09	.09	.08	.02	.03	7.2	.01	.94	.05
16	16	16	1.0	.09	.05	.05	.01	.08	18	.01	2.9	.05
17	15	13	1.2	.13	.05	.03	.01	.06	11	.01	2.6	.05
18	11	14	1.5	.10	.05	.03	.01	.03	6.0	.01	1.5	.06
19	13	11	1.0	.05	.03	.02	.03	.03	3.3	.01	.90	.05
20	20	11	.87	.02	.02	.01	.37	.01	2.9	.02	.44	.77
21	52	8.6	.79	.03	.01	.01	.05	.01	1.3	.02	.40	.22
22	35	7.2	.74	.03	.01	.02	.02	.01	.72	.06	.47	.15
23	12	5.5	.76	.03	.02	.02	.01	.01	.67	.21	.57	.09
24	5.7	5.3	.76	.05	.02	.03	.01	.01	.65	.02	.40	.07
25	4.1	10	.66	.06	.04	.05	.00	.01	.46	.01	.26	.06
26	10	8.3	.60	.05	.06	.05	.00	.05	.28	.01	.23	.08
27	9.5	8.1	.64	.02	.05	.08	.00	.11	.14	.01	.20	.06
28	6.5	33	.57	.02	.02	.14	.00	.07	.11	.01	.14	.06
29	4.8	29	.52	.02	---	.08	.00	.03	.08	.01	.14	.09
30	7.9	16	.50	.03	---	.11	.29	1.6	.05	.07	.68	.08
31	6.7	---	.53	.05	---	.08	---	1.0	---	.06	.83	---
TOTAL	352.3	313.3	53.34	5.18	3.13	2.04	1.43	5.52	248.99	1.14	22.89	5.73
MEAN	11.4	10.4	1.72	.17	.11	.07	.05	.18	8.30	.04	.74	.19
MAX	52	33	8.2	1.8	1.7	.23	.37	1.6	131	.24	2.9	.78
MIN	4.0	4.0	.50	.02	.01	.01	.00	.01	.02	.01	.01	.05
CFSM	.09	.08	.01	.00	.00	.00	.00	.00	.06	.00	.01	.00
IN.	.10	.09	.02	.00	.00	.00	.00	.00	.07	.00	.01	.00
AC-FT	699	621	106	10	6.2	4.0	2.8	11	494	2.3	45	11

CAL YR 1985	TOTAL	21184.36	MEAN	58.0	MAX	17000	MIN	.00	CFSM	.45	IN.	6.16	AC-FT	42020
WTR YR 1986	TOTAL	1014.99	MEAN	2.78	MAX	131	MIN	.00	CFSM	.02	IN.	.29	AC-FT	2010

08190000 NUECES RIVER AT LAGUNA, TX

LOCATION.--Lat 29°25'42", long 99°59'49", Uvalde County, Hydrologic Unit 12110101, on right bank 0.5 mi downstream from Sycamore Creek, 1.0 mi northeast of Laguna, and at mile 370.8.

DRAINAGE AREA.--737 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year.

REVISED RECORDS.--WSP 1562: 1930, 1931(M), 1932, 1939. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,119.72 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 26, 1925, nonrecording gage at site 2 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Many small diversions above station for irrigation.

AVERAGE DISCHARGE.--63 years, 147 ft^3/s (2.71 in/yr), 106,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 307,000 ft^3/s Sept. 24, 1955, (gage height, 29.95 ft, in gage well, 32.7 ft, from outside floodmarks), from rating curve extended above 40,000 ft^3/s on basis of float measurement of 110,000 ft^3/s and slope-area measurements of 213,000 and 307,000 ft^3/s; minimum, 2.6 ft^3/s Mar. 14-16, 1957.
Maximum stage since at least 1866, that of Sept. 24, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1913 reached a stage of about 29 ft (discharge, 210,000 ft^3/s); flood of Sept. 21, 1923, reached a stage of about 26.5 ft (discharge, 160,000 ft^3/s); from information by local residents. Discharges based on rating curve mentioned above.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	1930	3,970	7.05	Sept. 26	1700	*8,550	*8.97
May 31	1200	3,370	6.76				

Minimum daily discharge, 34 ft^3/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	529	155	116	97	80	85	68	57	240	128	46	36
2	322	160	114	97	80	85	66	56	269	124	45	36
3	238	149	114	97	84	85	66	57	222	119	44	36
4	195	143	115	95	105	84	84	57	192	114	44	36
5	165	140	113	94	163	82	72	55	172	106	43	37
6	145	137	111	93	143	81	71	54	160	103	42	38
7	125	133	110	93	133	80	71	54	152	98	41	56
8	114	131	110	99	127	80	67	55	144	96	41	49
9	106	128	112	100	122	82	66	55	150	93	40	47
10	101	127	113	100	117	80	66	59	148	89	40	46
11	95	125	129	97	115	80	66	54	143	86	40	50
12	88	124	125	94	111	80	66	53	143	83	40	86
13	84	122	116	93	108	80	66	55	136	82	39	63
14	80	121	113	92	106	79	65	58	132	80	38	58
15	79	119	113	92	102	79	65	60	127	76	37	57
16	80	119	112	92	99	76	64	62	127	75	37	56
17	83	119	110	91	98	76	66	66	147	73	37	55
18	80	119	110	90	96	77	66	66	157	70	36	54
19	959	117	110	90	94	75	66	66	322	68	35	53
20	1240	117	108	90	93	75	66	65	379	64	35	53
21	637	113	107	90	90	73	62	63	300	62	34	53
22	445	114	107	87	90	73	63	60	238	61	36	53
23	326	116	106	86	89	73	61	60	201	59	35	52
24	277	115	105	85	90	72	58	58	181	57	40	50
25	246	113	105	84	90	72	60	64	170	55	37	50
26	223	114	102	83	89	72	59	73	163	53	36	1760
27	205	125	102	83	86	70	60	87	154	52	35	1090
28	187	121	101	83	86	69	59	96	148	50	35	492
29	176	118	101	81	---	69	59	93	142	49	35	326
30	166	116	99	80	---	69	59	89	135	48	35	220
31	160	---	98	80	---	68	---	408	---	47	35	---
TOTAL	7956	3770	3407	2808	2886	2381	1953	2315	5494	2420	1193	5148
MEAN	257	126	110	90.6	103	76.8	65.1	74.7	183	78.1	38.5	172
MAX	1240	160	129	100	163	85	84	408	379	128	46	1760
MIN	79	113	98	80	80	68	58	53	127	47	34	36
CFSM	.35	.17	.15	.12	.14	.10	.09	.10	.25	.11	.05	.23
IN.	.40	.19	.17	.14	.15	.12	.10	.12	.28	.12	.06	.26
AC-FT	15700	7480	6760	5570	5720	4720	3870	4590	10900	4800	2370	10210

CAL YR 1985 TOTAL 68317 MEAN 187 MAX 3670 MIN 31 CFSM .25 IN. 3.45 AC-FT 135500
WTR YR 1986 TOTAL 41731 MEAN 114 MAX 1760 MIN 34 CFSM .15 IN. 2.11 AC-FT 82770

08190000 NUECES RIVER AT LAGUNA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1949 to June 1952, September 1964 to current year. Chemical, biochemical, and pesticide analyses: February 1970 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
FEB 14...	1045	131	440	8.00	15.0	7	0.5	10.0	101	0.4	K8
JUN 03...	1022	221	412	7.70	22.5	5	1.0	7.9	94	0.4	100
AUG 05...	1700	50	409	8.00	30.0	5	0.2	8.4	--	0.6	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB 14...	K10	210	25	58	15	8.6	0.3	0.8	182	14	12
JUN 03...	150	190	14	57	12	6.3	0.2	0.9	178	11	9.7
AUG 05...	44	200	18	57	14	7.3	0.2	1.1	182	13	11

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
FEB 14...	0.1	11	230	3	1	0.89	<0.01	0.90	0.01	0.19	<0.2
JUN 03...	0.1	11	210	5	2	--	<0.01	0.80	0.02	--	<0.2
AUG 05...	0.2	13	230	1	1	0.59	<0.01	0.60	0.02	0.18	<0.2

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)
FEB 14...	<0.01	7.3	<1	37	<1	<10	1	<3	<1	<1	<0.1
JUN 03...	<0.01	1.3	--	--	--	--	--	--	--	--	--
AUG 05...	<0.01	1.1	<1	48	<1	<10	<1	11	<5	1	<0.1

DATE	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
FEB 14...	<1	<1	3	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01
JUN 03...	--	--	--	--	--	--	--	--	--	--	--
AUG 05...	<1	<1	5	--	--	--	--	--	--	--	--

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
FEB 14...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
JUN 03...	--	--	--	--	--	--	--	--	--	--
AUG 05...	--	--	--	--	--	--	--	--	--	--

08190000 NUECES RIVER AT LAGUNA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
FEB										
14...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
JUN										
03...	--	--	--	--	--	--	--	--	--	--
AUG										
05...	--	--	--	--	--	--	--	--	--	--

08190500 WEST NUECES RIVER NEAR BRACKETTVILLE, TX

LOCATION.--Lat 29°28'21", long 100°14'10", Kinney County, Hydrologic Unit 12110102, at Wilson Ranch on Farm Road 3199, 1.3 mi upstream from Miguel Canyon, 16.0 mi northeast of Brackettville, and 40.2 mi upstream from mouth.

DRAINAGE AREA.--694 mi^2.

PERIOD OF RECORD.--September 1939 to September 1950, April 1956 to current year.

REVISED RECORDS.--WSP 1312: 1949(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,326.79 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 14, 1940, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Oct. 1 to Apr. 8. Records good except for estimated daily discharges and those below 1 ft^3/s, which are poor. In ordinary years, a large part of streamflow is lost by seepage into the Balcones Fault Zone of the Edwards and associated limestones above station. No known diversion above station.

AVERAGE DISCHARGE.--41 years (water years 1940-50, 1957-86), 35.1 ft^3/s (25,430 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 246,000 ft^3/s Sept. 20, 1964 (gage height, 31.3 ft, from floodmark), from rating curve extended above 4,500 ft^3/s on basis of slope-area measurements of 10,000, 51,000, 150,000, and 246,000 ft^3/s; no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, about 40 ft June 14, 1935 (discharge, 550,000 ft^3/s, based on slope-area measurements of 580,000 ft^3/s at site 33 mi upstream from gage) and 536,000 ft^3/s (at site 24 mi downstream from gage, present site and datum), from gage-height relation of 1935 and 1955 flood peaks at site 0.6 mi upstream. Flood in 1900 reached a stage of about 34 ft, and flood of Sept. 24, 1955, reached a stage of 27.1 ft, from floodmark at present site (discharge, 150,000 ft^3/s, by slope-area measurement).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 31	2200	*2,080	a*6.71	No other peak greater than base discharge.			

a From floodmark.

Minimum daily discharge, 0.04 ft^3/s Jan. 11 to Feb. 3, Apr. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.24	.07	.05	.04	.18	.10	.07	505	3.0	.20	.12
2	.22	.23	.07	.05	.04	.17	.10	.06	51	2.7	.16	.12
3	.21	.22	.07	.05	.04	.17	.10	.06	12	2.6	.16	.12
4	.18	.22	.07	.05	.52	.16	.10	.06	7.4	2.5	.16	.10
5	.16	.21	.07	.05	3.0	.16	.10	.06	5.9	2.4	.16	.09
6	.14	.20	.06	.05	1.6	.15	.09	.06	5.1	2.0	.16	.13
7	.13	.19	.06	.05	.90	.15	.09	.06	4.2	2.0	.16	.73
8	.12	.18	.06	.05	.56	.14	.09	.06	3.9	1.9	.16	.44
9	.10	.18	.06	.05	.47	.14	.09	.08	3.6	1.8	.14	.36
10	.09	.17	.06	.05	.42	.13	.09	.17	3.2	1.7	.14	.33
11	.09	.16	.06	.04	.37	.13	.09	.15	2.9	1.4	.14	.31
12	.08	.16	.06	.04	.34	.13	.09	.14	2.6	1.3	.14	.34
13	.07	.15	.05	.04	.32	.12	.09	.18	2.6	1.3	.14	.32
14	.06	.14	.05	.04	.30	.12	.09	.25	2.5	1.3	.14	.31
15	.06	.14	.05	.04	.28	.12	.08	.35	2.0	1.2	.12	.31
16	.06	.13	.05	.04	.27	.12	.05	.30	1.9	1.1	.12	.29
17	.05	.12	.05	.04	.26	.11	.07	.27	1.8	.95	.12	.24
18	.05	.12	.05	.04	.25	.11	.08	.17	1.9	.80	.10	.20
19	1.2	.12	.05	.04	.24	.11	.09	.16	1.7	.73	.07	.18
20	4.5	.11	.05	.04	.23	.11	.07	.16	306	.61	.06	.15
21	2.3	.11	.05	.04	.22	.11	.07	.16	78	.55	.06	.14
22	.90	.10	.05	.04	.22	.11	.06	.16	15	.49	.15	.12
23	.52	.10	.05	.04	.21	.11	.05	.14	6.2	.45	.12	.11
24	.45	.09	.05	.04	.21	.10	.04	.14	5.4	.43	.11	.10
25	.39	.09	.05	.04	.20	.10	.05	.25	4.8	.38	.12	.09
26	.36	.08	.05	.04	.20	.10	.05	.37	4.5	.36	.12	.09
27	.33	.08	.05	.04	.20	.10	.05	.67	4.2	.34	.12	.09
28	.31	.08	.05	.04	.19	.10	.05	.66	3.9	.31	.12	.09
29	.28	.08	.05	.04	---	.10	.06	.96	3.6	.29	.12	.12
30	.27	.08	.05	.04	---	.10	.06	.95	3.4	.23	.12	.10
31	.26	---	.05	.04	---	.10	---	216	---	.21	.12	---
TOTAL	14.19	4.28	1.72	1.34	12.10	3.86	2.29	223.33	1056.2	37.33	4.03	6.24
MEAN	.46	.14	.05	.04	.43	.12	.08	7.20	35.2	1.20	.13	.21
MAX	4.5	.24	.07	.05	3.0	.18	.10	216	505	3.0	.20	.73
MIN	.05	.08	.05	.04	.04	.10	.04	.06	1.7	.21	.06	.09
AC-FT	28	8.5	3.4	2.7	24	7.7	4.5	443	2090	74	8.0	12

CAL YR 1985 TOTAL 2651.89 MEAN 7.27 MAX 1150 MIN .05 AC-FT 5260
WTR YR 1986 TOTAL 1366.91 MEAN 3.74 MAX 505 MIN .04 AC-FT 2710

08192000 NUECES RIVER BELOW UVALDE, TX

LOCATION.--Lat 29°07'25", long 99°53'40", Uvalde County, Hydrologic Unit 12110103, on right bank at McDaniel Ranch, 5.7 mi upstream from bridge on U.S. Highway 83, 8.8 mi southwest of Uvalde, 18.2 mi downstream from West Nueces River, and at mile 338.7.

DRAINAGE AREA.--1,861 mi².

PERIOD OF RECORD.--April 1939 to current year. October 1927 to April 1939, published as "near Uvalde"; records equivalent only during periods of flood flow.

REVISED RECORDS.--WSP 1732: 1956(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 796.12 ft above National Geodetic Vertical Datum of 1929. Oct. 4, 1927, to Apr. 30, 1939, water-stage recorder at site 6.2 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Part of the flow of the Nueces River enters the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin downstream from Laguna (station 08190000) and upstream from this station. At low stage, most of headwater flow enters this formation. There are many small diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--47 years, 118 ft³/s (85,490 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 189,000 ft³/s Sept. 24, 1955 (gage height, 24.61 ft, from floodmark), from rating curve extended above 34,000 ft³/s on basis of conveyance study and slope-area measurement of peak flow; no flow at times in 1951-57.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1836, 40.4 ft June 14, 1935, from floodmark (discharge at former site, 616,000 ft³/s, by slope-area measurement). Large floods also occurred in 1901 and 1913, stages unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	1500	*11,600	*11.10	June 21	0400	402	4.45
June 1	0530	402	4.45	Sept. 27	1300	1,200	5.23

Minimum daily discharge, 22 ft³/s Sept. 23-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	382	136	70	49	37	30	28	26	153	73	30	26
2	176	141	69	49	37	30	28	28	51	68	29	25
3	115	133	66	49	36	30	28	25	42	63	29	24
4	85	119	64	48	36	30	31	24	51	59	29	23
5	66	111	63	47	36	30	28	24	38	57	29	23
6	58	105	62	47	35	30	28	24	36	53	28	25
7	54	101	60	48	35	30	26	24	37	51	28	37
8	49	97	60	53	35	29	27	23	37	48	27	28
9	46	93	60	47	35	29	27	24	36	46	27	26
10	43	91	59	46	35	29	27	32	37	44	27	25
11	42	89	59	46	34	30	27	26	37	43	27	24
12	40	87	59	45	34	30	27	24	37	43	33	24
13	39	87	57	43	32	30	27	24	38	42	27	23
14	39	84	57	43	32	30	27	24	39	41	27	23
15	39	81	57	43	32	31	26	25	39	39	26	23
16	39	79	57	43	32	30	26	24	40	38	26	23
17	39	77	57	43	32	30	27	24	50	37	26	23
18	39	77	56	42	31	29	27	23	185	37	25	23
19	3400	76	55	42	32	29	27	23	191	36	24	23
20	2520	74	55	42	31	29	25	23	277	35	25	23
21	1070	72	55	40	32	29	26	23	356	35	25	23
22	651	71	55	40	31	29	26	23	262	34	31	23
23	463	70	54	39	31	29	26	23	195	34	27	22
24	342	69	53	39	31	29	26	23	155	33	27	22
25	269	69	53	39	31	29	26	23	130	32	27	22
26	256	68	52	38	31	29	26	25	113	32	26	22
27	219	71	52	37	31	29	26	27	102	31	25	541
28	191	70	52	37	30	29	26	23	94	31	25	440
29	171	73	51	37	---	29	32	23	86	31	24	168
30	156	72	49	37	---	29	26	23	79	30	24	94
31	144	---	49	37	---	28	---	33	---	30	25	---
TOTAL	11242	2643	1777	1335	927	913	812	763	3023	1306	835	1871
MEAN	363	88.1	57.3	43.1	33.1	29.5	27.1	24.6	101	42.1	26.9	62.4
MAX	3400	141	70	53	37	31	32	33	356	73	33	541
MIN	39	68	49	37	30	28	25	23	36	30	24	22
AC-FT	22300	5240	3520	2650	1840	1810	1610	1510	6000	2590	1660	3710

CAL YR 1985 TOTAL 58194 MEAN 159 MAX 10100 MIN 23 AC-FT 115400
WTR YR 1986 TOTAL 27447 MEAN 75.2 MAX 3400 MIN 22 AC-FT 54440

08193000 NUECES RIVER NEAR ASHERTON, TX

LOCATION.--Lat 28°30'00", long 99°40'54", Dimmit County, Hydrologic Unit 12110103, on right bank 28 ft downstream from bridge on Farm Road 190, 0.1 mi downstream from El Moro Creek, 5.8 mi northeast of Asherton, and at mile 266.0.

DRAINAGE AREA.--4,082 mi².

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 1118: 1944.

GAGE.--Water-stage recorder. Datum of gage is 470.92 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 2, 1940, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Part of flow of the Nueces River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Laguna and Uvalde (stations 08190000 and 08192000, respectively). Considerable loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Since March 1948, flow slightly regulated by Upper Nueces Reservoir (capacity, 7,590 acre-ft), 13 mi upstream. Many small diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--47 years, 178 ft³/s (129,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,500 ft³/s Oct. 6, 1959 (gage height, 30.88 ft); no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 33 ft June 17, 1935; flood of June 30, 1913, reached about same stage, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 24	1600	6,960	26.96	June 1	1100	*7,960	*27.72

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	243	87	1.5	.20	.03	.06	.00	7100	.09	.00	.00
2	.00	325	71	1.3	.14	.04	.06	.00	5060	.08	.00	.00
3	.00	314	62	1.1	.91	.09	.04	.00	2670	.07	.00	.00
4	.00	270	60	1.1	.75	.17	.04	.00	1680	.06	.00	.00
5	.00	328	59	.94	.28	.16	.04	.00	1600	.06	.00	.00
6	.00	343	55	.71	.08	.14	.04	.00	1340	.04	.00	.00
7	.00	257	52	.64	.06	.16	.04	.00	581	.04	.00	.00
8	.00	193	52	2.1	.04	.19	.04	.00	315	.04	.00	.00
9	.00	164	48	3.0	.04	.20	.04	.00	231	.04	.00	26
10	.00	147	41	2.5	.04	.18	.04	.91	518	.03	.00	1030
11	.00	136	33	1.9	.03	.16	.03	.03	427	.03	.00	1260
12	.00	126	26	1.4	.03	.10	.03	.02	293	.02	.00	658
13	.00	116	20	1.2	.04	.06	.02	.01	177	.02	.00	287
14	.00	109	12	1.2	.04	.06	.01	.00	103	.02	.00	152
15	.00	104	7.3	1.2	.04	.15	.01	.00	68	.01	.00	91
16	.00	100	4.7	1.2	.04	.16	.00	1.5	48	.01	.00	60
17	.00	98	2.2	1.4	.04	.09	.00	5.1	34	.00	.00	40
18	.00	100	.73	1.7	.04	.08	.00	6.5	25	.00	.00	25
19	.00	99	.26	1.9	.04	.05	.00	3.1	29	.00	.00	15
20	12	92	.09	1.7	.04	.04	.00	1.4	49	.00	.00	8.6
21	2280	87	.07	1.4	.04	.04	.00	.62	30	.00	.00	4.5
22	3860	85	.11	1.1	.03	.05	.00	.38	16	.00	.00	2.4
23	5620	84	.26	.76	.03	.06	.00	.32	9.4	.00	.00	1.3
24	6830	84	1.1	.63	.03	.05	.00	.25	6.1	.00	.00	.66
25	6030	84	1.2	.42	.03	.04	.00	.17	3.3	.00	.00	.31
26	3610	84	1.1	.27	.03	.04	.00	.23	1.4	.00	.00	.16
27	1480	93	1.1	.22	.03	.04	.00	.88	.65	.00	.00	.08
28	610	97	1.2	.15	.03	.05	.00	.24	.28	.00	.00	.07
29	445	96	1.5	.15	---	.06	.00	.17	.14	.00	.00	.06
30	339	93	1.6	.17	---	.06	.00	879	.09	.00	.00	.06
31	279	---	1.7	.21	---	.06	---	2370	---	.00	.00	---
TOTAL	31395.00	4551	704.22	35.17	3.17	2.86	.54	3270.83	22415.36	.66	.00	3662.20
MEAN	1013	152	22.7	1.13	.11	.09	.02	106	747	.02	.00	122
MAX	6830	343	87	3.0	.91	.20	.06	2370	7100	.09	.00	1260
MIN	.00	84	.07	.15	.03	.03	.00	.00	.09	.00	.00	.00
AC-FT	62270	9030	1400	70	6.3	5.7	1.1	6490	44460	1.3	.00	7260

CAL YR 1985 TOTAL 74647.81 MEAN 205 MAX 6830 MIN .00 AC-FT 148100
WTR YR 1986 TOTAL 66041.01 MEAN 181 MAX 7100 MIN .00 AC-FT 131000

08194000 NUECES RIVER AT COTULLA, TX

LOCATION.--Lat 28°25'34", long 99°14'23", La Salle County, Hydrologic Unit 12110105, on left bank at downstream side of bridge on U.S. Highway 81, 0.4 mi upstream from Missouri Pacific Railroad Co. bridge, 0.8 mi southwest of Cotulla, 1.0 mi upstream from Lind Dam, and at mile 216.9.

DRAINAGE AREA.--5,171 mi^2.

PERIOD OF RECORD.--November 1923 to current year. November 1923 to September 1926 monthly discharge only, published in WSP 1312; figures of daily discharge for Oct. 31, 1923, to Sept. 30, 1926, published in WSP 588, 608, and 628, have been found to be unreliable and should not be used. Gage-height records collected in this vicinity in 1914-17 and since 1922 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1732: 1957(M). WDR TX-83-3: Drainage area. See PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 368.08 ft above National Geodetic Vertical Datum of 1929. Oct. 31, 1923 to Aug. 3, 1924, nonrecording gage at approximate site of present gage at datum 7.28 ft higher. Aug. 4, 1924, to Nov. 19, 1934, nonrecording gage at site 5,000 ft downstream at datum 8.42 ft higher. Nov. 20, 1934, to July 14, 1938, water-stage recorder, and July 15, 1938, to Apr. 30, 1963, nonrecording gage, at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Part of flow of Nueces River and its headwater tributaries enter the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Laguna and Uvalde (stations 08190000 and 08192000, respectively). Considerable loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Low flow is slightly regulated by small storage reservoirs above station, with most diverted above station by pumping (see REMARKS for Nueces River near Asherton, station 08193000). Satellite telemeter at station.

AVERAGE DISCHARGE.--62 years (water years 1925-86), 266 ft^3/s (192,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,600 ft^3/s June 18, 1935 (gage height, 32.4 ft, from floodmark), from rating curve extended above 43,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times each year.

Maximum stage since at least 1879, that of June 18, 1935.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 19, 1899, reached a stage of 29.7 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 27	1600	*6,790	16.18	June 4	2000	6,750	*16.29

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	593	77	2.0	.40	.07	.00	.00	296	9.1	.00	.00
2	.00	532	77	1.8	.40	.04	.00	.00	938	6.0	.00	.00
3	.00	360	73	1.5	.82	.04	.00	.00	3170	4.4	.00	.00
4	.00	367	68	1.4	1.2	.04	.00	.00	6240	2.9	.00	.00
5	.00	328	61	1.2	.76	.04	.00	.00	5870	2.0	.00	.00
6	.00	272	57	1.1	.55	.04	.00	.00	4060	1.4	.00	.00
7	.00	305	55	1.0	.38	.03	.00	.00	3040	.94	.00	.00
8	.00	306	54	2.9	.32	.02	.00	.00	2540	.79	.00	.00
9	.00	227	51	2.4	.32	.02	.00	.00	2090	.40	.00	.00
10	.00	163	49	2.0	.32	.01	.00	.00	1460	.21	.00	.00
11	.00	134	46	1.6	.26	.01	.00	.00	597	.06	.00	.00
12	.00	120	44	1.4	.24	.00	.00	.00	546	.01	.00	59
13	.00	112	37	1.3	.18	.00	.00	.00	539	.00	.00	662
14	.00	105	32	1.2	.18	.00	.00	.00	394	.00	.00	886
15	64	99	27	1.1	.18	.00	.00	.00	253	.00	.00	383
16	42	92	23	1.1	.18	.00	.00	.00	156	.00	.00	153
17	14	89	21	1.1	.25	.00	.00	.02	107	.00	.00	102
18	3.6	85	20	1.1	.24	.00	.00	.01	92	.00	.00	71
19	32	81	17	.97	.24	.00	.00	.00	70	.00	.00	46
20	875	74	14	.91	.21	.00	.00	.00	56	.00	.00	36
21	348	75	12	.77	.16	.00	.00	.00	47	.00	.00	25
22	107	77	9.6	.76	.13	.00	.00	.00	41	.00	.00	18
23	704	74	6.0	.63	.09	.00	.00	.00	46	.00	.00	14
24	1410	69	4.2	.63	.09	.00	.00	.00	46	.00	.00	8.6
25	3140	67	3.7	.61	.12	.00	.00	.00	42	.00	.00	6.0
26	5720	65	3.7	.50	.18	.00	.00	.00	33	.00	.00	3.7
27	6670	77	3.7	.40	.18	.00	.00	.00	27	.00	.00	2.0
28	6160	68	3.5	.40	.13	.00	.00	.00	23	.00	.00	1.3
29	4220	65	3.3	.40	---	.00	.00	.00	17	.00	.00	.93
30	2520	73	3.0	.40	---	.00	.00	.60	12	.00	.00	.51
31	1510	---	2.5	.40	---	.00	---	129	---	.00	.00	---
TOTAL	33539.60	5154	958.2	34.98	8.71	.36	.00	129.63	32848	28.21	.00	2478.04
MEAN	1082	172	30.9	1.13	.31	.01	.00	4.18	1095	.91	.00	82.6
MAX	6670	593	77	2.9	1.2	.07	.00	129	6240	9.1	.00	886
MIN	.00	65	2.5	.40	.09	.00	.00	.00	12	.00	.00	.00
AC-FT	66530	10220	1900	69	17	.7	.00	257	65150	56	.00	4920

CAL YR 1985 TOTAL 85352.16 MEAN 234 MAX 6670 MIN .00 AC-FT • 169300
WTR YR 1986 TOTAL 75179.73 MEAN 206 MAX 6670 MIN .00 AC-FT 149100

08194200 SAN CASIMIRO CREEK NEAR FREER, TX

LOCATION.--Lat 27°57'53", long 98°58'00", Webb County, Hydrologic Unit 12110105, at downstream side of bridge on State Highway 44, 11.4 mi upstream from mouth, and 22 mi northwest of Freer.

DRAINAGE AREA.--469 mi².

PERIOD OF RECORD.--January 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 298 ft, from State Department of Highways and Public Transportation datum.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--24 years, 64.3 ft³/s (46,590 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,000 ft³/s Oct. 17, 1971 (gage height, 26.87 ft), from rating curve extended above 21,000 ft³/s on basis of flow-through-culverts, contracted opening, and flow-over-road determination of 82,000 ft³/s; no flow for many days each year.
Maximum stage since at least 1946, that of Oct. 17, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Second highest stage, 26 ft (discharge 65,200 ft³/s), occurred in 1954, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 15	2400	632	14.07	June 1	2100	2,390	18.72
Oct. 21	1900	755	14.74	June 8	1700	637	14.10
Nov. 20	1500	*7,500	*21.75	June 12	0700	1,040	15.92

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	28	.54	.46	.11	.03	9.6	1690	.48	.00	.00
2	.00	.00	18	.53	.46	.11	.03	6.8	1710	.38	.00	.00
3	.00	.00	11	.54	.46	.11	.03	2.3	757	.31	.00	.00
4	.00	.00	8.0	.53	.46	.10	.03	.50	58	.26	.00	.00
5	.00	.00	4.6	.48	.44	.09	.03	.22	22	.13	.00	.00
6	.00	.00	4.1	.46	.40	.08	.03	.08	12	.07	.00	.00
7	.00	.00	3.4	.47	.37	.08	.03	.04	5.6	.05	.00	.00
8	.00	.00	2.8	1.4	.39	.08	.03	.03	350	.04	.00	.00
9	.00	.00	2.7	2.4	.39	.08	.02	.02	177	.03	.00	2.1
10	.00	.00	2.7	2.8	.41	.07	.04	.03	354	.01	.00	1.2
11	.00	.00	3.2	2.7	.39	.07	.04	.02	728	.00	.00	.54
12	.00	.00	3.1	1.6	.37	.07	.04	.01	819	.00	.00	.28
13	.00	.00	2.5	1.2	.36	.06	.04	.00	100	.00	.00	.10
14	.00	.00	1.9	.91	.40	.05	.04	.00	49	.00	.00	.05
15	361	.00	1.6	.79	.39	.06	.04	.00	28	.00	.00	.04
16	404	.00	1.9	.73	.40	.05	.04	.00	17	.00	.00	.02
17	22	.00	1.6	.71	.37	.05	.04	.00	9.9	.00	.00	.01
18	.47	.00	1.2	.66	.34	.05	.04	.00	5.5	.00	.00	.00
19	1.6	.00	1.1	.61	.31	.04	.04	.00	3.3	.00	.00	.00
20	250	4330	1.0	.58	.29	.04	.04	.00	84	.00	.00	.00
21	475	2460	.95	.56	.26	.04	.04	.00	105	.00	.00	.00
22	605	1030	.95	.55	.22	.04	.04	.00	32	.00	.00	.00
23	133	92	.91	.53	.19	.04	.03	.00	7.7	.00	.00	.00
24	19	48	.83	.53	.18	.04	.02	.00	3.9	.00	.00	.00
25	3.8	33	.72	.52	.18	.04	.02	.00	20	.00	.00	.00
26	.93	23	.62	.48	.19	.04	.02	.00	3.0	.00	.00	.00
27	.06	63	.59	.46	.17	.04	.02	.00	1.3	.00	.00	.00
28	.00	346	.60	.46	.12	.04	.01	.00	1.0	.00	.00	.00
29	.00	173	.60	.46	---	.04	.02	.00	.86	.00	.00	.00
30	.00	55	.58	.46	---	.04	.04	.00	.71	.00	.00	.00
31	.00	---	.57	.46	---	.04	---	195	---	.00	.00	---
TOTAL	2275.86	8653.00	112.32	26.11	9.37	1.89	.96	214.65	7154.77	1.76	.00	4.34
MEAN	73.4	288	3.62	.84	.33	.06	.03	6.92	238	.06	.00	.14
MAX	605	4330	28	2.8	.46	.11	.04	195	1710	.48	.00	2.1
MIN	.00	.00	.57	.46	.12	.04	.01	.00	.71	.00	.00	.00
AC-FT	4510	17160	223	52	19	3.7	1.9	426	14190	3.5	.00	8.6

CAL YR 1985 TOTAL 40482.18 MEAN 111 MAX 4330 MIN .00 AC-FT 80300
WTR YR 1986 TOTAL 18455.03 MEAN 50.6 MAX 4330 MIN .00 AC-FT 36610

08194500 NUECES RIVER NEAR TILDEN, TX

LOCATION.--Lat 28°18'31", long 98°33'25", McMullen County, Hydrologic Unit 12110105, on right bank at downstream side of pier of bridge on State Highway 16, 1.8 mi upstream from Kings Branch, 10.5 mi south of Tilden, and at mile 135.4.

DRAINAGE AREA.--8,093 mi².

PERIOD OF RECORD.--November 1942 to current year.

REVISED RECORDS.--WSP 1512: 1947. WSP 1732: 1951(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 183.5 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Part of flow of Nueces River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Laguna and Uvalde (stations 08190000 and 08192000, respectively). Some loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Some diversions for irrigation above station.

AVERAGE DISCHARGE.--43 years (water years 1944-86), 425 ft³/s (307,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,500 ft³/s Sept. 24, 1967 (gage height, 26.57 ft); no flow at times.

Maximum stage since about 1902, that of Sept. 24, 1967. Flood of Oct. 11, 1946, reached a stage of 26.46 ft (discharge, 70,000 ft³/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in June 1935 reached a stage of 23.7 ft and in July 1942 about 22 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 15	2400	2,140	15.81	Nov. 26	0800	3,980	18.02
Oct. 25	1300	*6,490	*19.01	June 15	1800	2,800	16.87
Nov. 4	2400	3,800	17.88				

Minimum discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1330	1920	1030	7.1	4.6	3.8	.75	.24	.59	19	.00	.00
2	161	2180	1020	6.6	4.7	3.7	.70	.24	90	16	.00	.00
3	53	2760	294	5.3	4.9	3.7	.70	.32	578	13	.00	.00
4	25	3600	133	5.0	5.0	3.7	.65	.40	717	9.2	.00	.00
5	12	3760	104	4.5	4.7	3.7	.63	13	819	5.9	.00	.00
6	5.9	3380	90	4.5	4.4	3.6	.59	22	909	3.6	.00	.00
7	2.8	2780	81	7.2	4.3	3.0	.56	9.9	1000	2.2	.00	.00
8	2.0	1580	74	7.0	4.4	2.8	.57	4.7	1080	1.9	.00	.00
9	1.7	382	69	7.9	4.5	2.7	.63	2.6	1100	1.6	.00	.00
10	1.5	313	64	7.9	4.5	2.7	.58	4.1	1140	1.2	.00	.00
11	1.3	299	61	8.1	4.5	2.7	.56	8.1	1220	.98	.00	.00
12	1.0	236	56	9.5	4.5	2.4	.56	23	1400	.75	.01	.00
13	.88	174	52	10	5.0	2.1	.52	4.0	1760	.74	.03	.00
14	.79	138	49	9.9	5.3	1.8	.40	1.8	2250	.77	.02	.00
15	1140	119	46	9.3	6.3	1.7	.26	1.4	2700	.65	.01	.00
16	1560	188	42	8.0	6.4	1.7	.20	1.2	2780	.58	.00	.00
17	1010	123	38	6.9	6.4	1.6	.18	1.1	2640	.51	.00	173
18	1070	108	34	6.1	5.8	1.5	.18	.89	2250	.41	.00	395
19	1170	94	30	5.3	5.7	1.4	.18	.79	935	.40	.00	186
20	1280	105	27	5.2	5.5	1.2	.31	.71	179	.31	.00	104
21	1220	389	24	5.0	5.0	1.0	.25	.57	119	.30	.00	77
22	1880	836	23	4.5	4.3	1.0	.24	.56	184	.18	.00	58
23	2740	1120	21	3.7	4.1	1.0	.27	.63	163	.08	.02	43
24	3890	1690	18	3.7	4.0	.98	.25	.58	85	.04	.05	32
25	6190	3210	16	3.7	3.9	.93	.24	.43	56	.03	.03	22
26	5480	3880	14	3.4	4.3	.93	.24	.40	41	.03	.01	15
27	4290	3190	12	3.3	4.6	.88	.18	.44	53	.02	.00	9.4
28	3640	1770	10	3.3	4.3	.85	.17	.50	43	.00	.00	5.1
29	3080	799	9.5	3.5	---	.85	.14	.41	31	.00	.00	2.5
30	2600	924	8.5	3.8	---	.85	.24	.24	24	.00	.00	1.4
31	2150	---	8.1	4.2	---	.78	---	.31	---	.00	.00	---
TOTAL	45988.87	42047	3558.1	183.4	135.9	61.55	11.93	105.56	26346.59	80.38	.18	1123.40
MEAN	1484	1402	115	5.92	4.85	1.99	.40	3.41	878	2.59	.01	37.4
MAX	6190	3880	1030	10	6.4	3.8	.75	23	2780	19	.05	395
MIN	.79	94	8.1	3.3	3.9	.78	.14	.24	.59	.00	.00	.00
AC-FT	91220	83400	7060	364	270	122	24	209	52260	159	.4	2230

CAL YR 1985 TOTAL 237034.59 MEAN 649 MAX 6190 MIN .00 AC-FT 470200
WTR YR 1986 TOTAL 119642.86 MEAN 328 MAX 6190 MIN .00 AC-FT 237300

08195000 FRIO RIVER AT CONCAN, TX

LOCATION.--Lat 29°29'18", long 99°42'16", Uvalde County, Hydrologic Unit 12110106, on left bank 0.7 mi southeast of Concan Post Office, 15 mi upstream from Dry Frio River, and 222.8 mi upstream from mouth.

DRAINAGE AREA.--389 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to September 1929, October 1930 to current year.

REVISED RECORDS.--WSP 1342: Drainage area. WSP 1512: 1926, 1931-32, 1934(M), 1935-36. WSP 1712: 1958. WSP 1923: 1954(M), 1957(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,203.71 ft above National Geodetic Vertical Datum of 1929. Oct. 26, 1923, to July 28, 1924, nonrecording gage at site 86 ft upstream at datum 5.08 ft lower. July 29, 1924, to Oct. 3, 1930, nonrecording gage, and Oct. 4, 1930, to May 18, 1939, water-stage recorder, at site 130 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Many small diversions for irrigation above station.

AVERAGE DISCHARGE.--61 years (water years 1925-29, 1931-86), 113 ft³/s (3.94 in/yr), 81,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 162,000 ft³/s July 1, 1932 (gage height, 34.44 ft, from floodmarks), from rating curve extended above 44,000 ft³/s on basis of flow-over-dam measurement of 56,600 ft³/s and slope-area measurement of 162,000 ft³/s; no flow Aug. 5, 1956, to Jan 6, 1957.
Maximum stage since at least 1869, that of July 1, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	1430	*14,700	*11.58	June 19	1530	959	5.21
May 31	1500	1,110	5.35	Sept. 26	1930	630	4.86
June 18	1130	1,180	5.41				

Minimum daily discharge, 44 ft³/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	175	123	92	71	67	62	57	181	119	58	61
2	83	179	117	94	71	67	63	54	123	115	58	54
3	80	170	115	92	75	68	63	54	111	115	56	54
4	82	161	115	92	86	67	65	56	106	107	57	52
5	81	155	112	90	84	67	63	54	102	104	58	52
6	78	149	111	89	80	66	63	53	97	100	56	53
7	79	145	111	89	82	65	60	52	96	98	56	81
8	80	141	111	96	83	64	60	56	161	97	54	74
9	80	141	111	96	83	66	58	54	254	94	52	65
10	80	141	111	92	81	67	61	64	194	92	52	64
11	79	144	115	89	80	65	72	56	153	89	51	60
12	80	139	118	89	80	67	72	54	131	86	51	58
13	80	137	116	88	80	67	70	52	121	89	53	58
14	77	137	115	86	78	66	69	53	116	89	52	55
15	82	133	115	87	77	67	65	68	109	87	51	53
16	101	131	115	83	77	67	64	57	104	83	48	53
17	99	129	111	83	75	67	65	57	197	80	49	53
18	95	129	111	83	75	67	65	54	287	77	48	53
19	2910	129	109	81	72	65	63	52	382	76	46	52
20	850	125	108	80	72	65	59	52	342	75	45	52
21	436	122	108	80	72	65	58	50	219	75	44	52
22	331	118	107	80	70	65	56	47	187	72	61	52
23	284	118	102	80	70	64	55	49	169	70	56	52
24	256	118	102	78	70	64	54	50	159	69	59	51
25	237	118	102	77	70	63	54	51	152	68	70	50
26	223	122	102	75	70	63	54	57	143	67	58	153
27	213	123	102	75	68	63	54	75	135	65	56	236
28	202	127	98	75	67	63	55	70	132	63	54	114
29	192	126	98	72	---	63	59	66	128	63	54	87
30	183	126	97	73	---	62	76	65	125	61	52	75
31	179	---	93	74	---	63	---	305	---	60	52	---
TOTAL	8008	4108	3381	2610	2119	2025	1857	1994	4916	2605	1667	2079
MEAN	258	137	109	84.2	75.7	65.3	61.9	64.3	164	84.0	53.8	69.3
MAX	2910	179	123	96	86	68	76	305	382	119	70	236
MIN	77	118	93	72	67	62	54	47	96	60	44	50
CFSM	.64	.34	.27	.21	.19	.16	.15	.16	.40	.21	.13	.17
IN.	.74	.38	.31	.24	.19	.19	.17	.18	.45	.24	.15	.19
AC-FT	15880	8150	6710	5180	4200	4020	3680	3960	9750	5170	3310	4120

CAL YR 1985 TOTAL 61334 MEAN 168 MAX 2910 MIN 44 CFSM .41 IN. 5.63 AC-FT 121700
WTR YR 1986 TOTAL 37369 MEAN 102 MAX 2910 MIN 44 CFSM .25 IN. 3.43 AC-FT 74120

08195000 FRIO RIVER AT CONCAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: June 1952, December 1964 to July 1965. Chemical, biochemical, and pesticide analyses: August 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
FEB 13...	1300	92	424	8.00	11.0	3	0.4	10.8	100	0.3	K12
JUN 03...	1830	101	428	8.00	24.5	5	1.2	8.0	99	0.7	74
AUG 06...	1600	55	396	7.80	28.5	5	0.4	10.0	--	0.7	K12

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
FEB 13...	K5	210	24	61	15	8.0	0.2	0.8	190	13	11
JUN 03...	120	200	14	62	12	6.2	0.2	1.0	190	13	9.5
AUG 06...	54	200	26	55	15	7.3	0.2	0.9	173	17	11

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
FEB 13...	0.1	10	230	2	2	--	<0.01	1.00	0.01	0.29	0.3
JUN 03...	0.1	11	230	3	2	--	<0.01	1.10	0.03	0.37	0.4
AUG 06...	0.2	13	220	3	2	0.39	<0.01	0.40	<0.01	0.19	<0.2

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)
FEB 13...	<0.01	2.0	<1	43	<1	<10	2	<3	3	<1	<0.1
JUN 03...	<0.01	1.4	--	--	--	--	--	--	--	--	--
AUG 06...	<0.01	1.6	<1	44	<1	<10	2	6	<5	1	<0.1

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
FEB 13...	<1	<1	5	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01
JUN 03...	--	--	--	--	--	--	--	--	--	--	--
AUG 06...	<1	<1	<3	--	--	--	--	--	--	--	--

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
FEB 13...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
JUN 03...	--	--	--	--	--	--	--	--	--	--
AUG 06...	--	--	--	--	--	--	--	--	--	--

08195000 FRIO RIVER AT CONCAN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
FEB										
13...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
JUN										
03...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX

LOCATION.--Lat 29°30'16", long 99°46'52", Uvalde County, Hydrologic Unit 12110106, on right bank 2.3 mi upstream from bridge on U.S. Highway 83, 3.1 mi upstream from Rocky Creek, 4.3 mi southeast of Reagan Wells, and 25.9 mi upstream from mouth.

DRAINAGE AREA.--126 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1952 to current year.

REVISED RECORDS.--WSP 1712: 1953. WSP 1923: 1955(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,335.2 ft above National Geodetic Vertical Datum of 1929, from State Department of Highways and Public Transportation datum.

REMARKS.--No estimated daily discharges. Records good. There are several small diversions above station.

AVERAGE DISCHARGE.--34 years, 34.2 ft^3/s (3.69 in/yr), 24,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 123,000 ft^3/s Aug. 13, 1966 (gage height, 27.6 ft, from floodmark), from rating curve extended above 900 ft^3/s on basis of slope-area measurements of 11,400, 30,700, 64,700, and 123,000 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875 occurred in 1880 (about 33 ft). Flood of June 14, 1935, reached a stage of 26.0 ft (discharge, 64,700 ft^3/s, determined at site 2.6 mi upstream), and flood of July 1, 1932, reached a stage of 23 ft (discharge, 30,700 ft^3/s, determined at site 2.0 mi upstream), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	1300	928	4.25	June 19	0730	2,330	6.58
May 31	1200	*6,270	*10.75				

Minimum daily discharge, 6.2 ft^3/s Aug. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	30	25	16	14	11	7.5	9.8	379	37	9.5	9.6
2	57	34	24	16	14	11	7.6	9.5	142	34	9.2	9.8
3	48	30	23	16	18	11	7.7	8.9	98	32	8.7	9.0
4	42	28	22	16	21	11	10	8.5	80	30	9.0	8.4
5	37	26	21	16	18	11	9.0	8.4	66	28	8.9	8.1
6	34	25	21	15	17	11	8.5	8.1	56	26	8.7	8.1
7	32	24	21	15	16	11	8.2	7.8	50	25	8.4	30
8	30	23	20	20	16	10	8.0	8.1	49	24	8.0	36
9	29	23	20	20	16	11	7.6	8.1	43	22	7.8	28
10	29	22	20	19	16	11	7.9	8.9	38	21	7.5	25
11	27	23	22	18	15	11	7.9	9.1	35	20	7.5	22
12	26	22	22	18	15	12	7.8	7.9	32	19	7.5	20
13	25	22	21	17	14	12	7.4	7.4	31	19	7.6	19
14	25	21	21	17	14	11	7.1	10	29	19	7.2	17
15	26	21	21	17	14	12	6.9	21	27	18	6.9	16
16	24	21	19	17	14	11	7.1	15	25	19	6.7	16
17	24	21	19	16	14	10	7.4	15	92	17	6.7	14
18	24	21	19	16	14	11	7.5	14	165	16	6.6	14
19	123	21	18	16	14	9.8	7.4	11	704	15	6.3	13
20	79	23	18	16	15	9.7	6.9	9.4	232	14	6.2	13
21	69	24	18	16	14	9.5	6.5	8.3	159	14	6.4	12
22	65	22	18	15	13	9.3	6.5	7.6	124	14	11	12
23	55	21	17	15	12	8.8	6.5	7.1	100	13	9.2	12
24	47	21	17	15	12	9.2	6.3	6.8	82	13	13	11
25	42	21	17	14	12	9.2	6.3	7.5	72	12	21	10
26	39	21	17	14	12	9.1	6.6	13	65	12	14	10
27	39	29	17	14	12	8.7	6.7	50	57	12	12	10
28	36	32	17	14	11	8.0	7.2	53	50	11	11	9.7
29	34	27	16	14	---	7.9	8.8	48	45	11	10	9.4
30	32	26	16	14	---	7.5	12	38	41	10	9.8	9.0
31	31	---	16	14	---	7.4	---	1150	---	9.7	9.4	---
TOTAL	1306	725	603	496	407	313.1	228.8	1595.2	3168	586.7	281.7	441.1
MEAN	42.1	24.2	19.5	16.0	14.5	10.1	7.63	51.5	106	18.9	9.09	14.7
MAX	123	34	25	20	21	12	12	1150	704	37	21	36
MIN	24	21	16	14	11	7.4	6.3	6.8	25	9.7	6.2	8.1
CFSM	.36	.21	.17	.14	.12	.09	.07	.44	.91	.16	.08	.13
IN.	.42	.23	.19	.16	.13	.10	.07	.51	1.01	.19	.09	.14
AC-FT	2590	1440	1200	994	807	621	454	3160	6280	1160	559	875

CAL YR 1985	TOTAL	16435.3	MEAN	45.0	MAX	503	MIN	7.8	CFSM	.38	IN.	5.23	AC-FT 32600
WTR YR 1986	TOTAL	10151.6	MEAN	27.8	MAX	1150	MIN	6.2	CFSM	.24	IN.	3.23	AC-FT 20140

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: February 1970 to current year. Pesticide analyses: January 1974 to current year. Sediment analyses: January 1966.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
FEB											
13...	1025	13	374	7.90	12.0	5	0.3	9.7	92	0.6	K6
JUN											
04...	1330	78	426	7.90	24.0	3	1.0	7.7	95	0.6	120
AUG											
06...	1130	12	401	7.90	27.5	5	0.3	8.0	--	0.4	K8

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB											
13...	K31	200	21	58	13	7.2	0.2	0.5	177	15	11
JUN											
04...	170	210	4	67	11	5.3	0.2	0.7	209	12	8.3
AUG											
06...	160	200	20	60	12	6.4	0.2	0.8	179	14	10

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
FEB											
13...	0.1	9.0	220	1	1	--	<0.01	0.80	0.01	--	<0.2
JUN											
04...	<0.1	9.8	240	2	1	--	<0.01	1.10	0.02	0.28	0.3
AUG											
06...	0.1	12	220	3	3	0.29	<0.01	0.30	<0.01	0.19	<0.2

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)
FEB											
13...	<0.01	0.8	<1	49	<1	<10	<1	<3	<1	<1	<0.1
JUN											
04...	<0.01	2.9	--	--	--	--	--	--	--	--	--
AUG											
06...	<0.01	1.8	<1	48	<1	<10	<1	7	<5	2	<0.1

DATE	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
FEB											
13...	<1	<1	16	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	<1	<1	<3	--	--	--	--	--	--	--	--

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
FEB										
13...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
JUN										
04...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
FEB										
13...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
JUN										
04...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--

08197500 FRIO RIVER BELOW DRY FRIO RIVER NEAR UVALDE, TX

LOCATION.--Lat 29°14'44", long 99°40'27", Uvalde County, Hydrologic Unit 12110106, on right bank 1.1 mi upstream from Farm Road 1023, 5.7 mi downstream from Dry Frio River, 6.3 mi downstream from bridge on U.S. Highway 90, 7.2 mi northeast of Uvalde, and 194.5 mi upstream from mouth.

DRAINAGE AREA.--631 mi².

PERIOD OF RECORD.--September 1952 to current year. Sum of records published as Frio River at Knippa and Dry Frio River at Knippa for period September 1952 to September 1953 is equivalent to record for this station.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.47 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Part of flow of Frio River enters the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Concan (station 08195000) and this station. Most of low flow enters this formation. Many diversions for irrigation above station. Satellite telemeter at station.

AVERAGE DISCHARGE.--34 years, 29.6 ft³/s (21,450 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 88,500 ft³/s Aug. 13, 1966 (gage height, 23.88 ft, from floodmark), from rating curve extended above 12,000 ft³/s on basis of slope-area measurements of 24,400, 53,000, and 88,500 ft³/s; no flow most of time each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887, about 35 ft in 1894. Flood of July 1, 1932, reached a stage of about 30 ft. A higher flood than that of 1894 occurred prior to 1887. Above information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	2030	*16,100	*12.50	May 31	2030	5,420	8.68

Minimum discharge, no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.43	.00	.00	.00	.00	.00	.00	.00	248	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.65	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3160	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	1690	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	274	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	91	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	3.9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.90	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	635	---	.00	.00	---
TOTAL	5244.55	.00	.00	.00	.00	.00	.00	635.00	248.73	.00	.00	.00
MEAN	169	.00	.00	.00	.00	.00	.00	20.5	8.29	.00	.00	.00
MAX	3160	.00	.00	.00	.00	.00	.00	635	248	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	10400	.00	.00	.00	.00	.00	.00	1260	493	.00	.00	.00

CAL YR 1985 TOTAL 12193.73 MEAN 33.4 MAX 3160 MIN .00 AC-FT 24190
WTR YR 1986 TOTAL 6128.28 MEAN 16.8 MAX 3160 MIN .00 AC-FT 12160

08198000 SABINAL RIVER NEAR SABINAL, TX

LOCATION.--Lat 29°29'27", long 99°29'33", Uvalde County, Hydrologic Unit 12110106, on right bank 108 ft upstream from concrete dam, 2.3 mi downstream from mouth of Onion Creek, 12.5 mi north of Sabinal, and 41.6 mi upstream from mouth.

DRAINAGE AREA.--206 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1942 to current year.

REVISED RECORDS.--WSP 1312: 1943(M), 1944(M), 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 1,131.20 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 9, 1971, at site 0.3 mi downstream at same datum.

REMARKS.--Estimated daily discharges: June 26 to Aug. 6. Records good except those for estimated daily discharges which are fair. There are several small diversions above station for irrigation.

AVERAGE DISCHARGE.--44 years, 55.7 ft³/s (3.67 in/yr), 40,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,200 ft³/s June 17, 1958 (gage height, 28.3 ft, from floodmark, at present site), from rating curve extended above 6,900 ft³/s on basis of slope-area measurement of 55,200 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1892, about 33 ft July 2, 1932, from information by local residents. There is a legend that a flood in the middle 1800's reached a stage of nearly 63 ft, see flood history for station 08198500.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 19	1200	*10,900	*12.58	No other peak greater than base discharge.			

Minimum daily discharge, 11 ft³/s Apr. 23-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	66	57	42	30	23	18	16	52	36	20	230
2	28	69	55	42	30	24	18	12	47	34	20	110
3	23	65	56	42	44	24	18	12	44	32	20	82
4	24	63	56	42	36	24	18	12	42	31	20	53
5	22	62	53	40	35	23	18	12	40	30	20	47
6	22	60	53	41	33	23	17	12	40	28	20	42
7	23	59	53	40	34	23	17	12	37	28	20	55
8	23	58	52	44	34	23	17	14	48	27	20	59
9	24	58	52	44	34	23	15	13	54	26	20	56
10	24	58	52	44	34	23	14	70	51	25	21	54
11	24	57	52	41	30	23	15	33	47	24	20	46
12	25	54	50	39	30	23	16	22	48	24	20	43
13	26	54	51	39	30	20	16	18	44	24	20	41
14	27	53	51	37	31	21	14	20	42	23	22	39
15	88	52	52	38	32	22	13	37	40	23	20	37
16	50	54	52	39	32	21	13	26	39	23	21	36
17	47	54	51	40	31	22	13	26	204	23	20	37
18	43	53	49	37	28	23	13	23	157	22	22	35
19	1520	54	47	36	27	20	13	20	130	22	20	34
20	174	48	47	36	27	20	13	20	138	22	18	32
21	148	48	48	35	26	20	12	19	113	22	18	32
22	133	51	48	34	26	20	12	19	102	22	22	32
23	117	52	47	34	26	20	11	19	88	21	23	30
24	102	52	45	34	26	20	11	19	73	21	27	30
25	91	52	44	34	26	20	11	19	63	21	27	30
26	84	52	44	33	26	19	11	21	56	21	22	29
27	79	59	45	32	25	19	11	35	50	21	22	29
28	76	58	44	32	24	19	11	40	45	21	20	28
29	72	58	43	33	---	18	12	38	41	20	22	27
30	67	60	43	30	---	18	27	33	38	20	23	24
31	69	---	43	30	---	18	---	44	---	20	22	---
TOTAL	3312	1693	1535	1164	847	659	438	736	2013	757	652	1459
MEAN	107	56.4	49.5	37.5	30.3	21.3	14.6	23.7	67.1	24.4	21.0	48.6
MAX	1520	69	57	44	44	24	27	70	204	36	27	230
MIN	22	48	43	30	24	18	11	12	37	20	18	24
CFSM	.52	.27	.24	.18	.15	.10	.07	.12	.33	.12	.10	.24
IN.	.60	.31	.28	.21	.15	.12	.08	.13	.36	.14	.12	.26
AC-FT	6570	3360	3040	2310	1680	1310	869	1460	3990	1500	1290	2890

CAL YR 1985 TOTAL 30166.7 MEAN 82.6 MAX 1520 MIN 8.1 CFSM .40 IN. 5.45 AC-FT 59840
WTR YR 1986 TOTAL 15265 MEAN 41.8 MAX 1520 MIN 11 CFSM .20 IN. 2.76 AC-FT 30280

08198000 SABINAL RIVER NEAR SABINAL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1964 to July 1965. Chemical and biochemical analyses: February 1970 to current year. Pesticide analyses: August 1971 to current year. Sediment analyses: November 1965.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
FEB 13...	1510	34	472	8.00	11.0	5	0.4	10.6	98	0.4	26
JUN 04...	1653	40	462	--	25.0	3	1.0	--	--	0.3	48
AUG 07...	1200	20	418	7.90	27.5	5	0.8	8.0	--	0.7	44

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
FEB 13...	K13	240	31	75	13	9.0	0.3	0.9	210	30	12
JUN 04...	51	210	18	66	12	7.3	0.2	1.2	196	25	10
AUG 07...	140	210	29	64	13	8.1	0.3	0.9	184	26	12

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB 13...	0.2	11	280	2	2	<0.01	0.60	0.02	<0.2	<0.01	0.8
JUN 04...	0.2	12	250	10	5	<0.01	0.20	0.04	<0.2	<0.01	1.2
AUG 07...	0.2	15	250	1	1	<0.01	0.20	0.03	<0.2	<0.01	1.5

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)
FEB 13...	<1	47	<1	<10	1	<3	<1	<1	<0.1	<1
JUN 04...	--	--	--	--	--	--	--	--	--	--
AUG 07...	<1	43	<1	<10	<1	12	<5	2	<0.1	<1

DATE	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
FEB 13...	<1	7	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01
JUN 04...	--	--	--	--	--	--	--	--	--	--
AUG 07...	<1	7	--	--	--	--	--	--	--	--

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
FEB 13...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
JUN 04...	--	--	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--

08198000 SABINAL RIVER NEAR SABINAL, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
FEB										
13...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
JUN										
04...	--	--	--	--	--	--	--	--	--	--
AUG										
07...	--	--	--	--	--	--	--	--	--	--

08198500 SABINAL RIVER AT SABINAL, TX

LOCATION.--Lat 29°18'05", long 99°28'46", Uvalde County, Hydrologic Unit 12110106, on left bank 80 ft downstream from bridge on U.S. Highway 90, 1,100 ft downstream from Southern Pacific Lines railroad bridge, 0.8 mi west of Sabinal, 5.8 mi upstream from Ranchero Creek, and 223 mi upstream from mouth.

DRAINAGE AREA.--241 mi^2.

PERIOD OF RECORD.--September 1952 to current year.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.17 ft above National Geodetic Vertical Datum of 1929. Prior to July 29, 1958, nonrecording gage, and July 29, 1958, to Mar. 19, 1964, water-stage recorder at site 80 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Feb. 6 to Apr. 14 and June 18 to July 27. Records good except those for estimated daily discharges, which are poor. Several small diversions for irrigation above station. Most of low flow of the Sabinal River enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses basin upstream from this station and downstream from Sabinal River near Sabinal (station 08198000). Several observations of water emperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--34 years, 30.1 ft^3/s (21,810 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,300 ft^3/s June 17, 1958 (gage height, 33.3 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 40 ft Aug. 24, 1919, from information by local residents. Flood of July 2, 1932, reached a stage of 31 ft (discharge, 60,000 ft^3/s), from information by Southern Pacific Lines. There is a legend that a flood in 1858 covered the townsite of Sabinal. The stage would have been 70 to 80 ft, which seems unlikely. However, it is possible that a flood occurred in 1858 that covered part of the townsite and was higher than any flood since that date.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	1700	*12,800	*18.61	May 27	0630	200	5.85

Minimum daily discharge, 0.35 ft^3/s May 1-7, 11-13, 16-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.1	2.1	2.0	1.8	1.1	.96	.35	1.8	1.5	.59	1.2
2	1.8	2.3	2.1	2.0	1.9	1.2	.94	.35	1.6	1.4	.68	.91
3	1.9	2.0	2.1	2.0	4.4	1.2	.90	.35	1.8	1.5	.85	.85
4	2.0	2.0	2.1	1.9	1.5	1.2	.86	.35	5.4	1.4	1.1	.85
5	2.2	2.0	2.1	1.9	1.5	1.1	.84	.35	1.5	1.3	1.1	.85
6	2.4	2.0	2.1	1.9	1.4	1.0	.80	.35	1.4	1.3	1.0	.87
7	2.5	2.0	2.1	2.0	1.4	1.1	.80	.35	1.5	1.4	1.2	6.1
8	2.6	2.0	2.1	3.6	1.4	1.1	.80	.36	1.6	1.5	1.1	4.0
9	2.7	1.9	2.1	3.3	1.4	1.1	.80	.64	1.6	1.6	.97	2.1
10	2.9	1.9	2.1	2.9	1.3	1.1	.76	.43	1.6	1.5	.85	1.1
11	3.0	1.9	2.2	2.7	1.3	1.1	.74	.35	1.8	1.4	.88	.87
12	3.0	1.9	2.2	2.7	1.3	1.1	.74	.35	1.8	1.2	.87	.85
13	3.1	1.9	2.2	2.7	1.3	1.2	.74	.35	1.8	1.4	.93	.85
14	3.4	1.8	2.2	2.7	1.3	1.3	.70	.36	2.0	1.5	.91	.82
15	5.0	1.8	2.2	2.7	1.4	1.4	.71	.36	2.1	1.4	.85	.79
16	4.5	1.8	2.2	2.7	1.4	1.2	.69	.35	1.9	1.4	.85	.78
17	4.9	1.8	2.2	2.6	1.4	1.1	.65	.35	2.2	1.3	.85	.78
18	5.1	1.8	2.2	2.4	1.3	1.0	.65	.35	1.5	1.1	.85	.78
19	1280	1.9	2.1	2.4	1.2	.94	.63	.35	1.6	1.2	.85	.78
20	271	2.0	2.1	2.2	1.2	.96	.58	.35	1.4	1.3	.85	.78
21	90	2.0	2.1	2.2	1.2	1.0	.56	.35	1.4	1.4	.85	.78
22	51	2.0	2.2	2.0	1.3	1.1	.51	.35	1.5	1.3	.85	.78
23	27	2.0	2.4	2.0	1.3	1.1	.46	.35	1.7	1.2	.85	.78
24	15	2.0	2.1	2.1	1.2	1.1	.45	.35	1.6	1.3	1.1	.78
25	9.6	2.0	2.1	2.1	1.2	1.1	.40	.35	1.4	1.3	.95	.78
26	6.7	2.0	2.1	1.7	1.2	1.2	.40	.43	1.4	1.3	.85	.78
27	4.6	2.2	2.3	1.7	1.1	1.1	.40	11	1.3	1.2	.85	.78
28	2.8	2.1	2.3	1.6	1.1	1.2	.40	1.3	1.4	1.3	.82	.78
29	2.0	2.1	2.0	1.9	---	1.1	.41	1.3	1.5	1.0	.78	.78
30	2.1	2.1	2.1	1.6	---	1.0	.40	1.3	1.5	1.1	.78	.73
31	2.1	---	2.3	1.7	---	.98	---	1.6	---	1.1	.79	---
TOTAL	1818.5	59.3	66.8	69.9	40.7	34.48	19.68	26.08	52.6	41.1	27.60	34.66
MEAN	58.7	1.98	2.15	2.25	1.45	1.11	.66	.84	1.75	1.33	.89	1.16
MAX	1280	2.3	2.4	3.6	4.4	1.4	.96	11	5.4	1.6	1.2	6.1
MIN	1.6	1.8	2.0	1.6	1.1	.94	.40	.35	1.3	1.0	.59	.73
AC-FT	3610	118	132	139	81	68	39	52	104	82	55	69

CAL YR 1985 TOTAL 8223.64 MEAN 22.5 MAX 1280 MIN .82 AC-FT 16310
WTR YR 1986 TOTAL 2291.40 MEAN 6.28 MAX 1280 MIN .35 AC-FT 4540

08200000 HONDO CREEK NEAR TARPLEY, TX

LOCATION.--Lat 29°34'10", long 99°14'47", Medina County, Hydrologic Unit 12110107, on left bank 460 ft downstream from bridge on Ranch Road 462, 6.3 mi southeast of Tarpley, and 16.6 mi northwest of Hondo.

DRAINAGE AREA.--95.6 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1952 to current year.

REVISED RECORDS.--WSP 1712: 1957. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,169.1 ft, from Magnolia Oil Company datum.

REMARKS.--No estimated daily discharges. Records good. There are several small diversions for irrigation above station.

AVERAGE DISCHARGE.--34 years, 37.8 ft^3/s (5.37 in/yr), 27,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,800 ft^3/s June 17, 1958 (gage height, 28.2 ft, from floodmark), from rating curve extended above 2,600 ft^3/s on basis of slope-area measurements of 18,600 and 69,800 ft^3/s; no flow at times in 1952-57, 1962-64, 1967, 1971, and 1984.

Maximum stage since at least 1907, that of June 17, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1932 reached a stage of about 26 ft (discharge, 58,500 ft^3/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 14	2330	4,180	6.80	May 9	2130	937	3.90
Nov. 27	0100	3,180	6.00	June 18	0445	*5,840	*8.13

Minimum daily discharge, 4.4 ft^3/s Oct. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	30	58	29	18	14	9.6	8.1	30	37	13	36
2	11	32	54	28	18	14	9.4	7.7	29	35	13	40
3	9.6	28	53	27	36	14	9.7	7.5	29	33	13	37
4	7.6	28	52	27	25	14	10	7.4	35	31	13	31
5	6.0	26	48	26	23	13	9.6	7.2	30	30	12	30
6	5.2	26	47	26	21	13	9.5	6.9	27	29	12	30
7	5.0	25	47	26	21	13	9.1	6.8	27	28	12	43
8	5.0	24	45	30	21	13	8.7	9.5	30	27	11	31
9	5.2	24	44	27	20	13	19	105	34	26	11	30
10	5.0	24	45	26	20	13	9.6	84	30	25	11	27
11	4.7	25	61	26	20	13	9.7	24	32	24	11	27
12	4.7	24	46	25	19	13	9.5	18	29	24	12	26
13	4.4	24	43	24	19	13	8.7	16	34	25	12	25
14	251	23	40	24	19	13	8.5	19	29	24	11	24
15	209	25	39	23	18	14	8.0	31	28	23	10	24
16	20	23	39	23	18	12	8.2	19	27	22	11	24
17	16	23	38	22	18	11	8.4	18	124	21	11	23
18	14	23	38	22	17	12	8.9	15	888	20	10	23
19	58	23	37	22	17	11	8.6	13	126	20	9.9	22
20	61	21	37	21	17	11	7.8	13	91	19	9.6	22
21	63	21	37	21	16	11	7.4	12	75	18	20	21
22	58	21	35	20	16	11	7.2	12	67	17	40	21
23	52	21	34	20	15	10	6.9	12	62	17	40	21
24	46	21	33	21	15	10	6.8	12	57	16	45	20
25	43	21	32	20	15	10	6.9	12	53	16	21	20
26	39	22	32	20	15	10	6.7	17	50	15	18	20
27	35	410	32	19	15	10	6.8	44	49	15	18	19
28	32	72	31	19	14	9.9	6.6	33	44	15	17	22
29	31	64	31	19	---	9.9	7.2	28	41	14	17	21
30	30	64	30	18	---	9.9	17	25	38	14	16	19
31	29	---	29	18	---	9.6	---	32	---	13	21	---
TOTAL	1175.4	1238	1267	719	526	368.3	270.0	675.1	2245	693	501.5	779
MEAN	37.9	41.3	40.9	23.2	18.8	11.9	9.00	21.8	74.8	22.4	16.2	26.0
MAX	251	410	61	30	36	14	19	105	888	37	45	43
MIN	4.4	21	29	18	14	9.6	6.6	6.8	27	13	9.6	19
CFSM	.44	.48	.47	.27	.22	.14	.10	.25	.87	.26	.19	.30
IN.	.51	.53	.55	.31	.23	.16	.12	.29	.97	.30	.22	.34
AC-FT	2330	2460	2510	1430	1040	731	536	1340	4450	1370	995	1550

CAL YR 1985 TOTAL 20578.0 MEAN 56.4 MAX 972 MIN 2.1 CFSM .65 IN. 8.88 AC-FT 40820
WTR YR 1986 TOTAL 10457.3 MEAN 28.7 MAX 888 MIN 4.4 CFSM .33 IN. 4.51 AC-FT 20740

08200000 HONDO CREEK NEAR TARPLEY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1965 to September 1969. Chemical and biochemical analyses: February 1970 to current year. Pesticide analyses: August 1971 to current year. Sediment analyses: November to December 1965.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB 12...	1245	19	449	8.00	9.5	7	0.6	12.0	0.6	K8	K12
JUN 05...	1550	32	385	8.10	30.0	3	1.2	7.5	0.2	120	110
AUG 07...	1200	11	419	7.90	--	3	0.5	6.8	0.7	K10	120

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
FEB 12...	230	36	74	11	8.0	0.2	1.0	194	32	11	0.2
JUN 05...	180	17	56	10	5.7	0.2	1.3	164	25	7.9	0.2
AUG 07...	200	32	61	11	8.0	0.3	0.9	166	33	10	0.2

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB 12...	10	260	1	1	<0.01	0.40	0.02	--	<0.2	<0.01	1.5
JUN 05...	8.9	210	3	2	<0.01	<0.10	0.02	0.18	0.2	<0.01	1.8
AUG 07...	15	240	8	5	<0.01	0.10	0.05	0.15	0.2	0.02	2.1

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)
FEB 12...	<1	35	<1	<10	<1	3	<1	2	<0.1	<1
JUN 05...	--	--	--	--	--	--	--	--	--	--
AUG 07...	<1	38	<1	<10	<1	12	<5	2	<0.1	<1

DATE	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
FEB 12...	<1	4	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01
JUN 05...	--	--	--	--	--	--	--	--	--	--
AUG 07...	<1	<3	--	--	--	--	--	--	--	--

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
FEB 12...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
JUN 05...	--	--	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--

08200000 HONDO CREEK NEAR TARPLEY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
FEB										
12...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
JUN										
05...	--	--	--	--	--	--	--	--	--	--
AUG										
07...	--	--	--	--	--	--	--	--	--	--

08200700 HONDO CREEK AT KING WATERHOLE NEAR HONDO, TX

LOCATION.--Lat 29°23'26", long 99°09'04", Medina County, Hydrologic Unit 12110107, on left bank 0.3 mi downstream from county road low-water crossing, 3.1 mi north of Hondo, 7.8 mi upstream from Verde Creek, and 55.4 mi upstream from mouth.

DRAINAGE AREA.--149 mi^2.

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 897.87 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Most of the low flow of Hondo Creek enters Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Tarpley (station 08200000) and this station. Small diversions above station for irrigation. Satellite telemeter at station.

AVERAGE DISCHARGE.--26 years, 12.8 ft^3/s (9,270 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,900 ft^3/s July 15, 1973 (gage height, 16.4 ft, from floodmark), from rating curve extended above 9,800 ft^3/s on basis of contracted-opening measurement of peak flow; no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 21 ft in September 1919, from information by local resident. Other floods occurred in July 1932, stage 18 ft, and June 17, 1958, stage 17 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 14	1330	899	3.77	June 18	0930	*4,730	*6.33
Oct. 19	0400	1,340	4.24				

Minimum daily discharge, no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	14	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	4.7	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	127	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	4.7	.00	.00	.00
18	5.0	.00	.00	.00	.00	.00	.00	.00	754	.00	.00	.00
19	257	.00	.00	.00	.00	.00	.00	.00	76	.00	.00	.00
20	13	.00	.00	.00	.00	.00	.00	.00	12	.00	.00	.00
21	3.5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	1.9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	42	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	427.40	55.00	.00	.00	.00	.00	.00	.00	865.40	.00	.00	.00
MEAN	13.8	1.83	.00	.00	.00	.00	.00	.00	28.8	.00	.00	.00
MAX	257	42	.00	.00	.00	.00	.00	.00	754	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	848	109	.00	.00	.00	.00	.00	.00	1720	.00	.00	.00

CAL YR 1985	TOTAL	1314.92	MEAN	3.60	MAX	508	MIN	.00	AC-FT	2610
WTR YR 1986	TOTAL	1347.80	MEAN	3.69	MAX	754	MIN	.00	AC-FT	2670

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX

LOCATION.--Lat 29°34'23", long 99°24'10", Medina County, Hydrologic Unit 12110107, on right bank 200 ft upstream from county road crossing, 4.5 mi downstream from Cascade Creek, 7.9 mi southeast of Utopia, and 58.0 mi upstream from mouth.

DRAINAGE AREA.--45.0 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1961 to current year.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder, crest-stage gages, and concrete control. Datum of gage is 1,265.8 ft, from Magnolia Oil Company datum, adjustment unknown.

REMARKS.--Estimated daily discharges: Oct. 19-21. Records good. No known diversion above station.

AVERAGE DISCHARGE.--25 years, 17.9 ft^3/s (5.40 in/yr), 12,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,500 ft^3/s July 15, 1973 (gage height, 14.4 ft, from floodmark), from rating curve extended above 910 ft^3/s on basis of field estimate of flow over and around end of dam, 14,100 ft^3/s, and slope-area measurement of 52,600 ft^3/s; no flow for many days in 1963-64.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1901, 16.4 ft June 17, 1958, from floodmarks (discharge 52,600 ft^3/s, by slope-area measurement of peak flow).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 9	1900	1,750	4.33	June 18	0330	*4,710	*5.99

Minimum daily discharge, 2.6 ft^3/s Apr. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	24	22	9.6	6.5	5.7	4.6	4.6	28	35	6.5	42
2	4.9	26	21	9.6	6.5	5.7	4.6	3.4	25	34	6.3	18
3	4.1	20	20	9.1	22	6.0	4.4	3.2	24	30	6.0	13
4	3.5	18	20	8.9	13	5.9	4.9	3.1	24	28	6.1	11
5	2.9	18	18	8.1	9.8	5.7	4.6	3.1	21	27	5.7	10
6	2.8	18	18	7.9	9.0	5.7	4.6	3.1	19	25	5.3	9.6
7	2.8	17	17	8.0	8.4	5.4	4.6	3.1	18	24	5.3	23
8	2.8	16	17	10	8.4	5.3	4.6	4.7	32	23	5.3	19
9	2.8	16	16	9.4	8.4	5.3	4.4	140	21	22	5.3	17
10	3.0	16	16	8.6	8.4	5.3	4.3	45	18	20	4.9	15
11	3.0	16	20	8.0	8.4	5.5	4.3	18	21	19	4.9	16
12	2.8	15	16	7.9	8.0	6.1	4.3	13	19	18	4.6	15
13	2.8	15	15	7.6	7.9	5.6	3.9	11	17	24	5.1	13
14	6.5	14	14	7.4	8.0	6.2	3.8	13	16	19	4.5	12
15	16	14	14	7.3	7.9	6.4	3.6	16	15	16	4.3	11
16	7.1	14	14	7.0	7.4	5.7	3.6	12	15	16	3.9	11
17	6.8	14	14	9.1	7.4	5.7	3.5	11	154	14	3.9	10
18	6.0	14	14	7.9	7.7	6.1	3.7	9.2	399	14	3.9	9.5
19	300	13	13	7.4	7.9	5.3	3.9	8.2	87	13	3.9	9.0
20	56	11	13	7.4	7.4	5.3	3.5	7.4	78	13	3.7	8.4
21	48	11	12	7.4	7.4	5.3	3.4	6.9	69	11	3.9	7.9
22	44	11	12	7.2	7.0	5.3	3.0	6.1	62	11	4.8	9.1
23	40	11	12	7.0	6.6	5.3	2.8	6.1	57	10	4.2	8.3
24	39	11	11	7.0	6.5	4.9	2.8	6.1	53	9.7	4.7	7.4
25	35	11	11	6.9	6.5	4.7	2.8	5.8	52	9.6	5.9	7.4
26	33	12	11	6.5	6.5	4.7	2.6	8.5	46	9.0	4.5	7.0
27	32	37	11	6.5	6.4	4.9	2.6	30	42	8.5	4.3	7.0
28	31	25	11	6.5	5.7	4.9	2.7	19	41	8.0	3.8	6.7
29	26	24	10	6.5	---	4.9	3.4	15	38	7.6	3.6	6.3
30	24	24	10	6.5	---	4.6	23	14	36	7.4	3.6	6.3
31	24	---	9.8	6.5	---	4.6	---	32	---	6.9	3.5	---
TOTAL	818.7	506	452.8	240.7	231.0	168.0	132.8	481.6	1547	532.7	146.2	365.9
MEAN	26.4	16.9	14.6	7.76	8.25	5.42	4.43	15.5	51.6	17.2	4.72	12.2
MAX	300	37	22	10	22	6.4	23	140	399	35	6.5	42
MIN	2.8	11	9.8	6.5	5.7	4.6	2.6	3.1	15	6.9	3.5	6.3
CFSM	.61	.39	.34	.18	.19	.13	.10	.36	1.20	.40	.11	.28
IN.	.71	.44	.39	.21	.20	.15	.11	.42	1.34	.46	.13	.32
AC-FT	1620	1000	898	477	458	333	263	955	3070	1060	290	726

CAL YR 1985 TOTAL 9399.8 MEAN 25.8 MAX 300 MIN 1.1 CFSM .60 IN. 8.11 AC-FT 18640
WTR YR 1986 TOTAL 5623.4 MEAN 15.4 MAX 399 MIN 2.6 CFSM .36 IN. 4.85 AC-FT 11150

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1965 to September 1969. Chemical and biochemical analyses: March 1970 to current year. Pesticide analyses: January 1974 to current year. Sediment analyses: November 1965.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
FEB 12...	1620	7.4	436	8.10	12.5	5	0.6	10.8	104	0.4	22
JUN 05...	1320	22	427	8.00	27.5	3	1.0	8.4	--	0.1	K12
AUG 07...	1500	5.5	386	8.10	34.0	5	0.3	8.0	--	0.3	46

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB 12...	K1	220	54	70	12	7.3	0.2	0.9	170	55	8.3
JUN 05...	K13	190	36	58	11	5.6	0.2	1.1	154	37	8.4
AUG 07...	62	180	40	54	11	7.4	0.2	0.8	140	36	11

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB 12...	0.2	10	270	3	2	<0.01	0.50	0.02	<0.2	<0.01	1.3
JUN 05...	0.2	9.9	220	12	4	<0.01	0.20	0.02	<0.2	<0.01	1.3
AUG 07...	0.2	14	220	1	1	<0.01	0.20	--	--	--	1.5

DATE	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)
FEB 12...	<1	36	<1	<10	<1	4	1	<1	<0.1	<1
JUN 05...	--	--	--	--	--	--	--	--	--	--
AUG 07...	<1	33	<1	<10	<1	6	<5	1	<0.1	<1

DATE	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
FEB 12...	<1	6	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01
JUN 05...	--	--	--	--	--	--	--	--	--	--
AUG 07...	<1	4	--	--	--	--	--	--	--	--

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
FEB 12...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
JUN 05...	--	--	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
FEB										
12...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
JUN										
05...	--	--	--	--	--	--	--	--	--	--
AUG										
07...	--	--	--	--	--	--	--	--	--	--

08202700 SECO CREEK AT ROWE RANCH NEAR D'HANIS, TX

LOCATION.--Lat 29°21'43", long 99°17'05", Medina County, Hydrologic Unit 12110107, on left bank 2.9 mi north of D'Hanis and 8.0 mi downstream from Rocky Creek.

DRAINAGE AREA.--168 mi^2.

PERIOD OF RECORD.--November 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 900.88 ft above National Geodetic Vertical Datum of 1929. Prior to October 1970, published as "at Crook Ranch, near D'Hanis".

REMARKS.--Estimated daily discharges: Oct. 20 to Nov. 4. Records fair. All of low flow of Seco Creek enters Edwards and associated limestones in the Balcones Fault Zone, which crosses the basin between Miller Ranch (station 08201500) and this station. No known diversion above station.

AVERAGE DISCHARGE.--25 years (water years 1962-86), 7.75 ft^3/s (5,610 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,500 ft^3/s July 15, 1973 (gage height, 26.0 ft, from floodmark), from rating curve extended above 16,000 ft^3/s on basis of slope-area measurement of 35,800 ft^3/s; no flow most of time each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 35.7 ft May 31, 1935, from information by local resident. Other floods occurred Aug. 31, 1894, 33 ft; September 1919, 28 ft; July 2, 1932, 28.2 ft (discharge, 35,800 ft^3/s), by slope-area measurement; and June 17, 1958, 32.4 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	Unknown	*6,920	a*14.88	No other peak greater than base discharge.			

a From floodmark.

Minimum daily discharge, no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	147	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	3.2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.33	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	18	.00	.00	.00
19	838	.00	.00	.00	.00	.00	.00	.00	9.3	.00	.00	.00
20	85	.00	.00	.00	.00	.00	.00	.00	.97	.00	.00	.00
21	10	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00
22	6.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	1.5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	1091.12	.00	.00	.00	.00	.00	.00	.00	28.31	.00	.00	.00
MEAN	35.2	.00	.00	.00	.00	.00	.00	.00	.94	.00	.00	.00
MAX	838	.00	.00	.00	.00	.00	.00	.00	18	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	2160	.00	.00	.00	.00	.00	.00	.00	56	.00	.00	.00

CAL YR 1985 TOTAL 1192.96 MEAN 3.27 MAX 838 MIN .00 AC-FT 2370
WTR YR 1986 TOTAL 1119.43 MEAN 3.07 MAX 838 MIN .00 AC-FT 2220

08205500 FRIO RIVER NEAR DERBY, TX

LOCATION.--Lat 28°44'11", long 99°08'40", Frio County, Hydrologic Unit 12110106, on right bank 17 ft downstream from centerline of railroad tracks, 35 ft right of the Missouri Pacific Railroad Co. bridge abutment, 167 ft downstream from Interstate Highway 35, 917 ft downstream from Leona River, 2.5 mi south of Derby, and 115.1 mi upstream from mouth.

DRAINAGE AREA.--3,429 mi^2.

PERIOD OF RECORD.--August 1915 to current year.

REVISED RECORDS.--WSP 568: 1915-16, 1918-22. WSP 1312: 1917-18(M). WSP 1923: 1954. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 449.11 ft above National Geodetic Vertical Datum of 1929. Aug. 1, 1915, to Apr. 21, 1931, nonrecording gage, and Apr. 22, 1931, to Mar. 6, 1940, water-stage recorder at same site and datum. Mar. 7, 1940, to May 4, 1972, water-stage recorder, and May 5 to Nov. 1, 1972, nonrecording gage at site 167 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 24 to Dec. 1 and Jan. 9-26. Records good. Part of flow of Frio River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone upstream from U.S. Highway 90 (see REMARKS for stations 08197500, 08198500, 08200700, and 08202700). There is considerable loss of flow into various permeable formations downstream from the Balcones Fault Zone. There are many small diversions for irrigation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--71 years, 136 ft^3/s (98,530 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 230,000 ft^3/s July 4, 1932 (gage height, 29.45 ft, from floodmarks), from rating curve extended above 76,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times most years.

Maximum stage since at least 1860, that of July 4, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 21	2400	4,060	8.58	June 6	0400	*11,100	*11.65

Minimum daily discharge, no flow for many days

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	60	28	28	20	7.8	4.8	3.0	110	52	.00	.00
2	.00	58	28	26	23	4.2	4.6	2.4	315	48	.00	.00
3	.00	53	26	26	23	4.0	3.8	2.8	332	41	.00	.00
4	.00	51	30	26	24	7.4	3.1	15	227	35	.00	.00
5	.00	50	30	24	23	8.1	3.1	14	2470	30	.00	.00
6	.00	48	30	24	20	8.1	3.1	9.6	7370	27	.00	.00
7	.00	45	31	25	23	8.1	79	6.8	1690	23	.00	.00
8	.00	43	33	28	25	6.7	58	5.8	421	20	.00	413
9	.00	37	33	26	25	7.0	39	6.0	229	20	.00	227
10	.00	36	33	25	24	6.3	27	8.8	162	18	.00	218
11	.00	34	34	25	23	6.6	16	9.5	131	16	.00	216
12	.00	33	34	24	21	6.9	10	7.5	109	13	.00	109
13	.00	33	33	23	20	6.2	6.6	34	97	11	.00	42
14	.00	31	30	23	19	4.7	5.2	42	85	12	.00	25
15	.00	30	26	24	19	12	4.1	29	81	11	.00	19
16	.00	29	26	23	19	12	5.3	28	79	7.8	.00	15
17	.00	28	26	23	20	6.3	7.5	20	75	3.5	.00	18
18	.00	28	27	24	20	6.6	8.2	18	206	4.3	.00	27
19	19	26	28	25	19	6.4	7.9	18	791	4.6	.00	13
20	193	25	29	23	18	5.5	6.3	17	889	4.0	.00	10
21	508	28	28	22	15	5.3	6.0	17	422	2.5	.00	14
22	3070	29	28	22	12	5.6	5.3	17	211	1.1	.00	17
23	1430	29	28	23	8.4	6.1	5.3	17	138	1.0	.00	15
24	1120	29	26	22	7.5	6.3	5.3	16	109	.56	.00	14
25	635	30	25	23	7.5	6.3	5.2	14	94	.49	.00	13
26	376	29	24	23	7.5	6.2	4.7	12	87	.51	.00	12
27	221	28	24	23	7.5	5.8	4.3	11	75	.54	.00	11
28	147	29	24	23	8.3	5.7	4.3	9.7	69	.50	.00	12
29	116	29	24	23	---	5.3	4.2	8.1	64	.36	.00	9.9
30	90	28	25	22	---	5.2	4.0	9.5	57	.15	.00	8.2
31	68	---	28	21	---	4.8	---	51	---	.00	.00	---
TOTAL	7993.00	1066	879	742	501.7	203.5	351.2	479.5	17195	408.91	.00	1478.10
MEAN	258	35.5	28.4	23.9	17.9	6.56	11.7	15.5	573	13.2	.00	49.3
MAX	3070	60	34	28	25	12	79	51	7370	52	.00	413
MIN	.00	25	24	21	7.5	4.0	3.1	2.4	57	.00	.00	.00
AC-FT	15850	2110	1740	1470	995	404	697	951	34110	811	.00	2930

CAL YR 1985 TOTAL 32390.56 MEAN 88.7 MAX 5460 MIN .00 AC-FT 64250
WTR YR 1986 TOTAL 31297.91 MEAN 85.7 MAX 7370 MIN .00 AC-FT 62080

08206600 FRIO RIVER AT TILDEN, TX

LOCATION.--Lat 28°28'02", long 98°32'50", McMullen County, Hydrologic Unit 12110108, on left end at downstream side of bridge on State Highway 16 in Tilden, 300 ft downstream from Leoncita Creek, 1.3 mi upstream from Salt Branch, 1.8 mi downstream from Big Slough, and 44.2 mi upstream from mouth.

DRAINAGE AREA.--4,493 mi^2.

PERIOD OF RECORD.--July 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 216.04 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Part of flow of Frio River and its headwater tributaries enter the Edwards and associated limestones in the Balcones Fault Zone, that crosses basin upstream from U.S. Highway 90 (see REMARKS for station 08205500). Considerable loss of flow into various permeable formations also occurs downstream from the Balcones Fault Zone. There are many small diversions above station for irrigation.

AVERAGE DISCHARGE.--8 years, 133 ft^3/s (106,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft^3/s May 19, 1980 at 0900 hours (gage height, 26.35 ft); no flow for many days in 1984-85.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1932 reached a stage of 38.44 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 1	0100	a*4,930	*22.29	June 10	1800	4,080	21.42
Oct. 22	2000	4,140	21.43				

a Stage falling. Peak occurred Sept. 30, 1985.

Minimum daily discharge, no flow Aug. 11-13, 15, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3000	89	47	23	23	8.6	5.2	8.6	29	29	.24	.14
2	1300	598	49	23	22	7.7	5.2	9.4	44	26	.22	.27
3	133	345	42	23	22	7.2	5.7	10	40	24	.15	.07
4	24	97	36	24	22	6.7	5.6	15	239	22	.10	.08
5	13	71	32	26	21	6.4	5.0	15	380	19	.10	.11
6	8.2	56	30	25	23	6.3	5.0	11	394	17	.10	.23
7	5.4	48	28	24	25	6.3	4.7	9.2	353	15	.05	.97
8	3.6	45	28	25	23	6.1	4.4	7.8	457	13	.03	.53
9	2.5	44	29	25	21	5.7	3.9	6.8	770	11	.01	.53
10	1.7	41	28	25	20	5.2	3.6	96	3140	9.9	.03	.49
11	1.2	39	28	26	20	4.9	24	363	2930	8.4	.00	123
12	.74	37	29	27	21	4.8	32	288	1530	7.2	.00	175
13	.50	36	29	26	23	4.8	23	74	540	6.9	.00	146
14	.37	36	29	24	23	4.8	19	27	143	7.0	.02	134
15	3.3	35	29	23	21	4.6	15	15	83	6.3	.00	64
16	3.0	256	29	24	20	4.4	11	11	60	5.8	.00	29
17	1.5	47	28	26	19	3.9	8.2	10	49	5.0	.02	16
18	.98	31	28	27	18	3.6	6.4	22	74	4.2	.04	11
19	2.0	29	27	29	18	3.4	5.2	22	163	3.7	.02	8.2
20	693	28	27	30	17	3.4	5.2	19	51	3.4	.01	6.1
21	1390	27	26	29	16	3.8	6.0	17	197	3.0	.03	5.0
22	3420	29	26	28	16	3.6	5.9	13	421	2.4	.04	9.1
23	3290	29	26	27	15	4.1	5.0	12	581	1.9	.13	7.6
24	2730	27	26	26	15	4.9	5.8	11	794	1.4	.12	4.6
25	2890	27	26	25	14	5.0	7.5	11	679	1.1	.11	3.2
26	2790	29	25	25	13	5.2	7.4	10	158	.79	.05	2.3
27	2120	52	25	24	12	5.2	6.6	11	62	.58	.04	2.3
28	1510	236	25	23	10	4.7	6.2	12	46	.46	.06	3.3
29	916	172	25	23	---	4.4	6.0	11	39	.34	.09	2.9
30	326	58	25	22	---	4.4	7.2	11	34	.32	.09	2.5
31	118	---	24	23	---	4.7	---	15	---	.21	.07	---
TOTAL	26697.99	2694	911	780	533	158.8	260.9	1173.8	14480	256.30	1.97	758.52
MEAN	861	89.8	29.4	25.2	19.0	5.12	8.70	37.9	483	8.27	.06	25.3
MAX	3420	598	49	30	25	8.6	32	363	3140	29	.24	175
MIN	.37	27	24	22	10	3.4	3.6	6.8	29	.21	.00	.07
AC-FT	52960	5340	1810	1550	1060	315	517	2330	28720	508	3.9	1500

CAL YR 1985	TOTAL	67067.42	MEAN	184	MAX	6920	MIN	.00	AC-FT	133000
WTR YR 1986	TOTAL	48706.28	MEAN	133	MAX	3420	MIN	.00	AC-FT	96610

08206700 SAN MIGUEL CREEK NEAR TILDEN, TX

LOCATION.--Lat 28°35'14", long 98°32'44", McMullen County, Hydrologic Unit 12110109, on left bank 25 ft downstream from State Highway 16, 0.3 mi upstream from mouth of Bruce Branch, 0.9 mi downstream from mouth of Far Live Oak Creek, 3 mi upstream from San Patricio Creek, 7 mi downstream from Clear Creek, 8.7 mi north of Tilden, and 12.9 mi upstream from mouth.

DRAINAGE AREA.--783 mi^2.

PERIOD OF RECORD.--January 1964 to current year.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 242.95 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. There are five diversions above station (amounts unknown). At times, excess water from Bexar-Medina-Atascosa Counties Water Improvement District No. 1 system enters San Miguel Creek basin via Chacon Creek 52 mi upstream (amounts unknown). Satellite telemeter at station.

AVERAGE DISCHARGE.--22 years, 63.2 ft^3/s (45,790 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft^3/s May 16, 1980 (gage height, 27.31 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1919, 32.6 ft in 1942; stage of 1919 flood not known, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 20	1900	1,710	13.90	June 6	2400	*8,020	*21.41
Oct. 23	0100	1,840	14.24	Sept. 8	0800	6,170	20.03

Minimum daily discharge, 0.01 ft^3/s May 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	72	13	3.9	2.0	.07	.24	20	118	9.5	.48	.04
2	22	371	12	3.9	1.4	.04	.24	16	277	9.0	.35	.04
3	8.3	157	9.1	3.6	1.2	.04	.24	3.5	400	8.5	.25	.04
4	4.3	75	8.3	3.4	.99	.04	.24	1.1	145	7.2	.23	.04
5	2.6	32	6.6	3.4	.74	.04	.24	.13	170	6.4	.16	.04
6	1.7	17	5.3	3.4	1.6	.04	.54	.03	4020	5.9	.16	.04
7	1.1	11	4.8	3.4	1.7	.04	.23	.02	5190	5.6	.14	185
8	1.3	7.8	4.4	3.8	1.1	.04	.06	.02	798	5.2	.10	3940
9	1.4	6.3	4.0	4.1	.59	.11	.06	.01	121	5.0	.10	920
10	1.4	5.5	3.6	4.1	1.1	.16	.05	54	75	4.5	.10	110
11	1.0	4.9	3.2	3.5	2.5	.16	.04	69	59	4.2	.06	62
12	.35	4.6	2.9	3.2	1.8	.16	5.2	11	51	4.0	.05	44
13	.33	4.0	2.6	2.8	1.4	.16	5.8	5.8	95	3.4	.04	29
14	.24	3.0	2.3	2.4	1.4	.16	4.9	4.8	116	3.4	.04	21
15	.96	3.8	2.2	2.2	1.4	.27	3.7	5.1	55	3.4	.04	16
16	5.5	5.4	2.2	2.0	1.4	.35	2.9	4.5	32	3.5	.04	14
17	12	3.5	2.1	2.1	1.4	.97	2.4	4.0	24	3.4	.04	12
18	7.4	3.4	2.0	3.0	1.3	1.3	1.8	4.7	30	3.2	.03	11
19	76	3.2	2.0	3.6	.95	1.3	1.5	6.8	19	3.1	.03	9.0
20	1220	2.9	2.0	3.4	.53	.97	2.0	7.0	16	2.9	.03	9.0
21	1020	2.9	2.0	3.0	.33	.97	1.4	6.0	17	2.6	.03	8.4
22	1240	2.8	2.0	2.9	.35	1.6	.52	3.7	51	2.4	.03	7.4
23	1120	2.8	2.5	2.8	.29	1.6	.17	2.3	34	2.3	.03	7.1
24	376	2.8	2.6	2.6	.24	1.3	.06	1.2	25	2.1	.03	6.7
25	99	2.8	2.8	2.5	.24	1.4	.04	.17	21	1.8	.03	5.9
26	50	2.8	2.9	2.1	.24	1.4	.02	.03	31	1.7	.03	5.2
27	32	71	3.0	1.8	.23	1.4	.02	1.2	23	1.6	.03	4.8
28	22	52	3.1	1.8	.10	1.3	.02	.04	17	1.4	.03	4.5
29	15	22	4.0	1.0	---	.73	.02	53	13	1.3	.03	4.2
30	11	12	4.1	1.2	---	.35	.04	137	10	.97	.03	3.9
31	9.2	---	4.1	2.2	---	.31	---	93	---	.85	.03	---
TOTAL	5447.08	967.2	127.7	89.1	28.52	18.78	34.69	515.15	12053	120.32	2.80	5440.34
MEAN	176	32.2	4.12	2.87	1.02	.61	1.16	16.6	402	3.88	.09	181
MAX	1240	371	13	4.1	2.5	1.6	5.8	137	5190	9.5	.48	3940
MIN	.24	2.8	2.0	1.0	.10	.04	.02	.01	10	.85	.03	.04
AC-FT	10800	1920	253	177	57	37	69	1020	23910	239	5.6	10790

CAL YR 1985 TOTAL 16104.17 MEAN 44.1 MAX 2680 MIN .00 AC-FT 31940
WTR YR 1986 TOTAL 24844.68 MEAN 68.1 MAX 5190 MIN .01 AC-FT 49280

08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX

LOCATION.--Lat 28°29'01", long 98°14'44", Live Oak County, Hydrologic Unit 12110108, at Choke Canyon Dam on Frio River, 3.9 mi upstream from Atascosa River, and 4.0 mi west of Three Rivers.

DRAINAGE AREA.--5,490 mi².

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Nonrecording gage read twice daily. Supplemental water-stage recorder operated by city of Corpus Christi. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Choke Canyon Dam was completed and deliberate impoundment began on Oct. 12, 1982. Choke Canyon Dam is a rolled earthfill dam, 3.5 mi long. The spillway has seven radial gates, each 50 ft long and 24 ft high. Water for municipal and industrial use to meet the needs of the Coastal Bend area is released downstream through a 5.0 x 5.0-foot square slide gate. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	241.1	-
Top of spillway gates	222.5	743,900
Crest of spillway	199.5	269,600
Lowest gated outlet (invert)	136.3	52

COOPERATION.--Capacity table computed June 1, 1983, provided by the city of Corpus Christi. Elevation record provided by the city of Corpus Christi and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 228,900 acre-ft June 26-30, 1986 (elevation, 196.6 ft); minimum, 4,500 acre-ft Oct. 1-9, 1984 (elevation, 156.9 ft).

EXTREMES (AT 0700) FOR WATER YEAR 1985.--Maximum contents, 110,900 acre-ft July 9-11 (elevation, 185.6 ft); minimum, 4,500 acre-ft Oct. 1-9 (elevation, 156.9 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 228,900 acre-ft June 26-30 at 0600 hours (elevation, 196.6 ft); minimum, 121,000 acre-ft Oct. 1 at 0700 hours (elevation, 186.8 ft).

Capacity table (elevation, in feet, and contents, in acre-feet)

156.0	4,000	170.0	25,000	190.0	151,500
160.0	6,860	180.0	69,720	197.0	234,200

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
INSTANTANEOUS OBSERVATIONS AT 0700

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4500	54240	53730	52700	81650	82350	85910	92590	97220	102000	106000	100400
2	4500	55290	53730	53210	81650	82350	85910	93350	97220	102000	106000	100400
3	4500	55290	53210	53730	81650	82350	85910	93350	97220	101200	106000	100400
4	4500	55820	53210	53730	81650	82350	85910	93350	96430	105200	106000	100400
5	4500	55820	53730	54240	81650	82350	85910	93350	96430	106800	105200	99580
6	4500	55820	53730	55820	81650	82350	85910	93350	96430	108400	105200	99580
7	4500	55820	53210	61340	81650	82350	85190	93350	96430	110100	105200	99580
8	4500	55820	53210	68480	81650	82350	85190	93350	96430	110100	104400	99580
9	4500	55820	53210	72260	81650	82350	85190	93350	96430	110900	104400	98790
10	4810	55820	53210	74200	81650	83050	85190	92590	96430	110900	104400	98790
11	6590	55290	53210	74860	81650	82350	87370	92590	95660	110900	104400	98790
12	7340	55290	53210	75520	81650	82350	87370	92590	95660	110100	103600	100400
13	11270	55290	53210	76850	81650	82350	87370	92590	95660	110100	103600	99580
14	19930	54770	53210	76850	81650	83050	87370	92590	95660	110100	103600	101200
15	28380	54770	53210	77530	81650	83050	87370	91830	95660	110100	103600	100400
16	33200	54770	53210	77530	81650	83760	86640	91830	95660	110100	102800	100400
17	35830	54770	53210	78200	81650	83760	86640	92590	95660	109200	102800	100400
18	40680	54770	53210	78200	81650	83760	86640	92590	95660	109200	102800	100400
19	46410	54770	53210	78880	81650	84480	86640	93350	95660	109200	102800	100400
20	50700	54240	53210	78880	81650	85910	86640	93350	98000	109200	102000	100400
21	52190	54240	53210	78880	81650	85910	86640	94110	100400	108400	102000	100400
22	53210	54240	53210	78880	81650	85910	86640	94880	101200	108400	102000	100400
23	53210	54240	52700	79570	82350	85910	86640	94880	101200	108400	102000	99580
24	53210	53730	52700	79570	82350	86640	86640	95660	101200	107600	101200	99580
25	53210	54240	52700	79570	82350	86640	85910	96430	101200	107600	102000	99580
26	53210	54240	52700	80260	82350	86640	85910	97220	101200	107600	102000	99580
27	53210	54240	52700	80950	82350	86640	88100	97220	101200	107600	102000	98790
28	53210	53730	52700	80950	82350	86640	89580	97220	101200	106800	101200	98790
29	53210	53730	52700	80950	---	86640	91830	97220	101200	106800	101200	98790
30	53210	53730	52700	80950	---	86640	92590	97220	102000	106800	101200	103600
31	54240	---	53210	80950	---	85910	---	97220	---	106800	101200	---
MAX	54240	55820	53730	80950	82350	86640	92590	97220	102000	110900	106000	103600
MIN	4500	53730	52700	52700	81650	82350	85190	91830	95660	101200	101200	98790

WTR YR 1985 MAX 110900 MIN 4500

08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX--Continued

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 0700

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	121000	191400	201000	199800	199800	195000	191400	186700	186700	227600	219800	210900
2	135600	192600	199800	199800	199800	195000	190200	186700	187900	227600	218500	210900
3	140400	196200	199800	199800	199800	195000	190200	186700	187900	227600	218500	210900
4	140400	197400	199800	199800	199800	195000	190200	186700	187900	227600	218500	209600
5	140400	197400	199800	199800	198600	195000	190200	185500	189000	227600	218500	209600
6	140400	197400	199800	198600	197400	195000	190200	185500	190200	226300	217200	209600
7	140400	196200	199800	198600	197400	195000	190200	185500	193800	226300	217200	210900
8	139400	196200	199800	199800	197400	195000	190200	185500	202200	227600	217200	209600
9	139400	196200	199800	199800	197400	193800	189000	185500	204700	227600	217200	215900
10	139400	196200	199800	199800	197400	195000	189000	185500	205900	226300	215900	217200
11	139400	196200	201000	199800	197400	195000	189000	187900	209600	226300	215900	217200
12	139400	196200	201000	199800	197400	195000	189000	189000	214700	226300	215900	217200
13	139400	196200	201000	199800	196200	193800	189000	189000	218500	226300	215900	217200
14	139400	196200	201000	199800	197400	193800	189000	189000	219800	225000	215900	217200
15	140400	196200	199800	199800	197400	193800	189000	189000	221100	225000	214700	217200
16	140400	197400	199800	199800	197400	193800	189000	189000	221100	225000	214700	217200
17	140400	199800	201000	199800	197400	193800	187900	189000	221100	225000	214700	217200
18	140400	199800	199800	199800	197400	193800	187900	189000	222400	223700	214700	217200
19	140400	199800	199800	199800	197400	192600	187900	187900	222400	223700	214700	217200
20	140400	199800	199800	199800	197400	192600	189000	187900	222400	223700	213400	217200
21	143400	199800	199800	199800	196200	192600	187900	187900	222400	223700	213400	215900
22	149400	199800	199800	199800	196200	192600	187900	187900	222400	222400	213400	215900
23	155600	199800	199800	199800	196200	192600	187900	187900	223700	222400	213400	215900
24	164200	199800	199800	199800	196200	191400	187900	187900	225000	222400	213400	215900
25	170800	199800	199800	199800	196200	191400	186700	186700	227600	222400	213400	215900
26	176400	199800	199800	199800	196200	191400	186700	186700	228900	221100	212100	214700
27	182100	199800	199800	199800	196200	191400	186700	186700	228900	221100	212100	214700
28	186700	199800	199800	199800	196200	191400	186700	186700	228900	221100	212100	214700
29	190200	199800	199800	199800	---	191400	186700	186700	228900	219800	212100	214700
30	191400	201000	199800	199800	---	191400	186700	186700	228900	219800	210900	214700
31	191400	---	199800	199800	---	191400	---	186700	---	219800	210900	---
MAX	191400	201000	201000	199800	199800	195000	191400	189000	228900	227600	219800	217200
MIN	121000	191400	199800	198600	196200	191400	186700	185500	186700	219800	210900	209600
(†)	193.6	194.4	194.3	194.3	194.0	193.6	193.2	193.2	196.6	195.9	195.2	195.5
(‡)	+87800	+9600	-1200	0	-3600	-4800	-4700	0	+42200	-9100	-8900	+3800

CAL YR 1985 MAX 201000 MIN 52700 (‡) +146590
WTR YR 1986 MAX 228900 MIN 121000 (‡) +111100

(‡) Elevation, in feet, at end of month.
(†) Change in contents, in acre-feet.

08208000 ATASCOSA RIVER AT WHITSETT, TX

LOCATION.--Lat 28°37'19", long 98°16'52", Live Oak County, Hydrologic Unit 12110110, on right bank at downstream side of bridge on Farm Road 99, 1.1 mi southwest of Whitsett, 4.2 mi downstream from La Parita Creek, and 12.9 mi upstream from mouth.

DRAINAGE AREA.--1,171 mi^2.

PERIOD OF RECORD.--September 1924 to May 1926, May 1932 to current year.

GAGE.--Water-stage recorder. Datum of gage is 159.04 ft above National Geodetic Vertical Datum of 1929. Prior to May 8, 1926, nonrecording gage at bridge at site 200 ft upstream at 1.38 ft higher datum. May 8, 1926, to Feb. 16, 1983, water-stage recorder at site 1,000 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 5 to Jan. 29. Records good except for estimated daily discharges, which are fair. Considerable loss of flow into various permeable formations occurs upstream from this station. The Campbellton water wells discharge into the Atascosa River 12 mi upstream from this station to supplement streamflow during dry periods. Records furnished by the Lower Nueces River Water Supply District indicate that during the current year, the Campbellton water wells did not discharge into the Atascosa River. There are several small diversions above station.

AVERAGE DISCHARGE.--55 years (water years 1925, 1933-86), 128 ft^3/s (92,740 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 121,000 ft^3/s Sept. 23, 1967 (gage height, 41.3 ft, from floodmark), from rating curve extended above 24,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times. Maximum stage since at least 1881, that of Sept. 23, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Second highest stage, 41 ft (discharge 106,000 ft^3/s), occurred in September 1919.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 1	0500	3,030	22.23	Nov. 3	2100	3,050	22.27
Oct. 21	0800	*4,280	*24.40				

Minimum daily discharge, no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2470	29	103	13	12	6.8	4.1	.30	212	9.3	.00	.00
2	420	351	67	13	12	6.6	4.1	3.2	132	6.9	.00	.00
3	65	2270	49	13	12	7.6	3.8	1.6	401	3.1	.00	.00
4	42	1910	40	13	12	7.2	3.7	1.2	727	2.0	.00	.00
5	26	273	35	13	13	6.3	3.8	1.3	145	1.4	.00	.00
6	20	126	32	13	14	6.2	3.7	1.1	70	.91	.00	.00
7	16	95	29	13	17	6.7	3.3	.87	157	.69	.00	6.8
8	13	76	27	13	18	7.8	3.4	.89	231	.57	.00	31
9	9.1	62	26	13	18	7.2	3.1	1.1	100	.62	.00	111
10	7.4	50	24	12	18	6.8	2.9	2.0	60	1.6	.00	61
11	9.0	42	23	12	14	6.9	2.9	71	53	.65	.00	37
12	7.1	35	22	12	9.4	6.6	2.9	80	56	.80	.02	21
13	6.8	31	21	12	9.3	6.5	2.7	35	257	.25	.01	13
14	5.8	28	20	12	9.3	5.8	2.2	18	543	.24	1.9	5.9
15	25	25	19	12	9.5	6.0	1.4	10	190	.47	13	1.8
16	132	46	19	12	9.6	7.0	.97	7.5	119	.99	1.7	.59
17	128	121	18	12	9.9	7.2	.77	7.2	64	1.5	.25	.83
18	59	56	18	12	10	6.5	.66	5.0	44	1.1	.10	.69
19	35	36	17	12	9.4	5.9	.66	4.0	43	.58	.03	.10
20	589	27	17	12	9.3	5.1	.70	3.3	76	.25	.00	.07
21	3650	24	16	12	9.3	5.1	.60	2.7	42	.14	.00	.05
22	2250	21	16	12	9.0	5.1	.39	2.3	26	.13	.00	.07
23	2420	19	16	12	8.2	4.6	.29	1.8	38	.10	.00	14
24	1240	19	16	12	8.0	4.6	.29	1.4	38	.09	.02	39
25	216	18	15	12	8.0	4.6	.39	1.3	125	.06	.04	11
26	120	18	15	12	8.0	4.6	.47	1.1	62	.06	.90	.75
27	91	111	15	12	7.9	4.6	.30	1.4	39	.03	2.5	.16
28	66	386	14	12	7.2	5.0	.27	19	31	.00	.45	.12
29	48	652	14	12	---	4.1	.31	44	20	.00	.12	.08
30	38	231	14	12	---	4.1	.45	23	13	.00	.04	.06
31	32	---	14	12	---	4.4	---	103	---	.00	.00	---
TOTAL	14256.2	7188	791	381	311.3	183.5	55.52	455.56	4114	34.53	21.08	356.07
MEAN	460	240	25.5	12.3	11.1	5.92	1.85	14.7	137	1.11	.68	11.9
MAX	3650	2270	103	13	18	7.8	4.1	103	727	9.3	13	111
MIN	5.8	18	14	12	7.2	4.1	.27	.30	13	.00	.00	.00
AC-FT	28280	14260	1570	756	617	364	110	904	8160	68	42	706

CAL YR 1985	TOTAL 40138.71	MEAN 110	MAX 3650	MIN .10	AC-FT 79620
WTR YR 1986	TOTAL 28147.76	MEAN 77.1	MAX 3650	MIN .00	AC-FT 55830

08210000 NUECES RIVER NEAR THREE RIVERS, TX
(National stream-gaging accounting network)

LOCATION.--Lat 28°25'38", long 98°10'40", Live Oak County, Hydrologic Unit 12110111, on right bank at U.S. Highway 281, 1.0 mi downstream from Frio River, 2.2 mi south of Three Rivers, and at mile 100.2.

DRAINAGE AREA.--15,427 mi^2, of which 5,490 mi^2 is above Choke Canyon Dam. See Remarks.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1915 to current year. Monthly discharge only for November 1919 to January 1920, published in WSP 1312.

REVISED RECORDS.--WSP 548: 1920-21. WSP 1562: 1916, 1918-21, 1922(M), 1923, 1929. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 99.26 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 5, 1932, nonrecording gage at railroad bridge 0.8 mi upstream at datum 1.87 ft higher. Apr. 5, 1932, to Aug. 9, 1983, recording gage at a site 0.8 mi upstream at datum 1.87 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow of the Frio River is impounded in Choke Canyon Reservoir (conservation-pool storage of 696,800 acre-ft), about 11 mi upstream on the Frio River. Part of flow of the Nueces and Frio Rivers and their headwater tributaries enter the Edwards and associated limestones in the Balcones Fault Zon upstream from U. S. Highway 90 (see REMARKS for station 08205500). Considerable loss of flow into various permeable formations also occurs downstream from the Balcones Fault Zone. There are many small diversions for irrigation and municipal supply above station. There is minor upstream regulation by small reservoirs and by ground-water supplements (see station 08208000 Atascosa River at Whitsett). Satellite telemeter at station.

AVERAGE DISCHARGE.--71 years, 827 ft^3/s (599,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 141,000 ft^3/s Sept. 23, 1967 (gage height, 49.21 ft); no flow at times. Maximum stage since about 1875, that of Sept. 23, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,770 ft^3/s Oct. 22 at 2200 hours (gage height, 24.47 ft, from floodmark); minimum daily, 9.3 ft^3/s Oct. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2990	2680	1090	27	18	12	15	12	200	62	16	13
2	3660	2360	1060	26	18	11	16	11	268	54	16	12
3	693	3140	977	29	18	11	15	12	387	49	17	12
4	160	4930	402	30	20	11	16	14	1420	43	16	12
5	90	4780	225	27	19	15	16	13	1370	39	16	13
6	59	3590	180	25	19	20	16	13	902	35	16	13
7	42	3750	155	24	19	19	16	13	984	32	16	15
8	32	3560	138	29	19	20	15	15	1700	33	16	16
9	26	2770	126	36	18	20	14	24	1440	30	16	54
10	20	764	116	35	17	20	15	101	1140	27	16	132
11	16	441	171	38	16	19	15	60	1130	26	16	61
12	13	406	316	37	16	20	15	120	1210	24	19	39
13	10	325	127	34	16	19	14	94	1470	22	35	27
14	9.3	254	100	34	16	19	15	55	2020	23	18	21
15	143	213	91	32	16	18	12	35	2100	23	17	18
16	1800	570	86	31	17	18	12	27	2040	26	21	17
17	2590	784	76	30	17	19	13	23	2260	25	19	15
18	1530	357	71	27	17	19	12	21	2660	24	16	28
19	1120	221	65	25	17	17	12	19	2710	24	14	370
20	1240	178	59	24	17	17	14	16	1450	22	14	207
21	2670	188	57	23	16	17	12	15	361	21	15	119
22	5390	456	52	23	15	16	12	14	220	19	15	85
23	5460	801	47	22	14	16	11	13	263	18	13	66
24	5120	1050	44	22	14	16	11	13	357	18	14	62
25	3880	1350	40	21	13	16	11	11	407	17	14	71
26	3560	1690	37	20	13	16	11	11	256	17	13	45
27	5200	2560	35	20	13	16	11	12	127	17	13	33
28	5770	3760	34	19	12	16	11	12	122	17	13	27
29	5110	4120	32	19	---	16	11	23	100	16	15	23
30	4150	2100	30	19	---	16	13	46	77	16	14	20
31	3360	---	28	18	---	16	---	38	---	16	13	---
TOTAL	65913.3	54148	6067	826	460	521	402	906	31151	835	502	1646
MEAN	2126	1805	196	26.6	16.4	16.8	13.4	29.2	1038	26.9	16.2	54.9
MAX	5770	4930	1090	38	20	20	16	120	2710	62	35	370
MIN	9.3	178	28	18	12	11	11	11	77	16	13	12
AC-FT	130700	107400	12030	1640	912	1030	797	1800	61790	1660	996	3260

CAL YR 1985 TOTAL 280456.9 MEAN 768 MAX 5770 MIN 3.5 AC-FT 556300
WTR YR 1986 TOTAL 163377.3 MEAN 448 MAX 5770 MIN 9.3 AC-FT 324100

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued
(National stream-gaging accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1941 to September 1952. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: January 1968 to May 1982. Sediment analyses: October 1941 to August 1945, May to September 1951, October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1945 to September 1947, September 1950 to September 1952, October 1974 to September 1981.
WATER TEMPERATURES: October 1975 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,310 microsiemens Jan. 17, 1977; minimum daily, 157 microsiemens May 26, 1975.
WATER TEMPERATURES: Maximum daily, 32.0°C on several days during summer of 1977-78 and 1981; minimum daily, 7.0°C Jan. 2, 3, 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT 22...	1456	5390	213	7.20	21.5	200	270	6.2	70	3.8	4000
JAN 30...	1036	18	2630	8.00	16.0	30	10	8.6	86	1.7	K32
MAR 12...	1339	20	2040	8.10	22.0	20	21	7.4	85	2.4	K100
MAY 15...	1420	34	1830	7.54	24.5	30	73	5.6	68	4.0	430
JUL 01...	1215	62	1080	8.10	30.0	15	--	6.2	--	3.8	56
AUG 25...	1300	15	770	7.80	28.5	10	25	6.5	--	1.8	120

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 22...	3500	60	3	21	1.9	18	1	6.4	57	26	20
JAN 30...	88	490	190	160	22	350	7	16	299	260	540
MAR 12...	860	450	240	140	24	270	6	16	212	250	410
MAY 15...	790	280	140	91	12	250	7	11	132	99	430
JUL 01...	40	230	69	75	9.3	130	4	12	157	86	210
AUG 25...	--	210	60	68	9.5	66	2	10	150	63	100

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT 22...	0.1	13	162	140	152	--	0.06	0.21	0.14	0.01	0.20
JAN 30...	1.0	16	1570	1500	15	12	0.79	0.75	0.01	0.02	0.80
MAR 12...	0.6	14	1270	1300	45	9	0.75	0.77	0.05	0.04	0.80
MAY 15...	0.5	12	1060	990	57	24	1.68	1.78	0.12	0.12	1.80
JUL 01...	0.3	19	658	640	58	9	0.58	0.59	0.02	0.02	0.60
AUG 25...	0.2	8.8	444	410	33	13	0.48	0.46	0.02	0.02	0.50

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued
(National stream-gaging accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)
OCT 22...	0.22	0.24	0.03	1.1	1.3	0.39	0.19	0.13	0.4	16	257
JAN 30...	0.77	0.11	0.12	0.59	0.7	0.17	0.14	0.13	0.4	6.6	38
MAR 12...	0.81	0.25	0.23	0.85	1.1	0.39	0.31	0.26	0.8	8.3	216
MAY 15...	1.90	0.27	0.24	1.0	1.3	0.37	0.23	0.12	0.37	--	154
JUL 01...	0.61	0.12	0.10	0.78	0.9	0.28	0.24	0.22	0.67	9.6	49
AUG 25...	0.48	0.15	0.13	0.55	0.7	0.21	0.16	0.13	0.4	7.7	42

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT 22...	3740	95	230	3	49	<0.5	<1	<1	<3	6	140
JAN 30...	1.8	40	<10	5	200	<10	5	<1	<1	2	30
MAR 12...	12	51	--	--	--	--	--	--	--	--	--
MAY 15...	14	99	--	--	--	--	--	--	--	--	--
JUL 01...	8.2	98	--	--	--	--	--	--	--	--	--
AUG 25...	1.7	100	<10	3	110	0.7	<1	<1	<3	<1	11

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 22...	4	9	3	0.2	<10	3	<1	<1	120	7	13
JAN 30...	15	120	110	<0.1	4	4	<1	<1	1500	14	30
MAR 12...	--	--	--	--	--	--	--	--	--	--	--
MAY 15...	--	--	--	--	--	--	--	--	--	--	--
JUL 01...	--	--	--	--	--	--	--	--	--	--	--
AUG 25...	<5	23	23	<0.1	<10	1	<1	<1	420	<6	19

08210400 LAGARTO CREEK NEAR GEORGE WEST, TX

LOCATION.--Lat 28°03'34", long 98°05'48", Live Oak County, Hydrologic Unit 12110111, near right bank 75 ft downstream from bridge on U.S. Highway 281, 0.6 mi upstream from Dix Hollow, and 19.3 mi south of George West.

DRAINAGE AREA.--155 mi².

PERIOD OF RECORD.--April 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 197.77 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversion.

AVERAGE DISCHARGE.--14 years, 2.02 ft³/s (1,460 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,350 ft³/s Aug. 11, 1980 (gage height, 16.50 ft); no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1887, 25.1 ft Oct. 17, 1971 (discharge, 33,500 ft³/s). Second highest stage, 24.3 ft occurred Sept. 12, 1971 (discharge, 29,500 ft³/s). The third and fourth highest floods occurred in 1914 and September 1967 (stage and discharge unknown).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 16	0600	82	6.54	June 8	0100	74	6.42
Oct. 20	0900	*920	*10.29				

Minimum daily discharge, no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.91	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	4.9	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	16	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	51	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	7.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2.7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	451	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	205	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	85	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	33	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	8.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	7.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	5.2	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	3.7	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	2.6	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	943.10	2.60	.00	.00	.00	.00	.00	.00	20.94	.00	.00	.00
MEAN	30.4	.09	.00	.00	.00	.00	.00	.00	.70	.00	.00	.00
MAX	451	1.4	.00	.00	.00	.00	.00	.00	16	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1870	5.2	.00	.00	.00	.00	.00	.00	42	.00	.00	.00

CAL YR 1985 TOTAL 2998.63 MEAN 8.22 MAX 1040 MIN .00 AC-FT 5950
WTR YR 1986 TOTAL 966.64 MEAN 2.65 MAX 451 MIN .00 AC-FT 1920

08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX

LOCATION.--Lat 28°02'17", long 97°52'15", San Patricio-Jim Wells County line, Hydrologic Unit 12110111, on right upstream corner of outlet tower at right end of Wesley E. Seale Dam on Nueces River, 0.6 mi upstream from bridge on State Highway 359, and 4.5 mi southwest of Mathis.

DRAINAGE AREA.--16,656 mi².

PERIOD OF RECORD.--September 1948 to current year. Prior to October 1960, month end records only. The Soil Conservation Service, U.S. Department of Agriculture, in cooperation with the Texas Board of Water Engineers (now Texas Department of Water Resources), collected fragmentary gage-height records in connection with sedimentation studies from Feb. 2, 1942, to July 10, 1947.

REVISED RECORDS.--WSP 1923: 1953(M), 1957(M).

GAGE.--Nonrecording gage read twice daily. Supplemental water-stage recorder operated by city of Corpus Christi. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1957, nonrecording gage at various sites 0.2 mi upstream at datum 0.52 ft higher. Oct. 1, 1957, to Apr. 3, 1961, nonrecording gage near left end of Mathis Dam 0.2 mi upstream at present datum.

REMARKS.--Mathis Dam was completed and storage began July 24, 1934. The original capacity at spillway crest (elevation, 74.5 ft) was 54,000 acre-ft, but by March 1948 had decreased to 39,400 acre-ft because of sedimentation. Wesley E. Seale Dam was completed and deliberate impoundment began on Apr. 26, 1958, submerging the old Mathis Dam. Wesley E. Seale Dam is a rolled earthfill dam, 5,930 ft long, including two spillways. The 1,320-foot north spillway has 33 gates that are operated by movable hydraulic lifts. The 1,080-foot south spillway has 27 gates that are electrically operated from the control tower. The gates were repaired and modified in August 1966. All gates in both spillways are 37.5 by 8.75 ft wide. Water for municipal supply for the city of Corpus Christi is released downstream through a 4.0-foot-diameter cylinder valve and three 2.5- by 4.0-foot rectangular openings. The releases are diverted from the river at Calallen 35 mi downstream for domestic, municipal, irrigation, mining, and industrial uses in the Corpus Christi area. The city of Alice withdrew 4,620 acre-ft from the lake during the current year for municipal use. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	106.0	-
Top of north spillway gates..................................	94.46	281,300
Top of south spillway gates..................................	94.0	272,000
Crest of spillways..	88.0	170,200
Lowest gated outlet (invert).................................	55.5	646

COOPERATION.--The capacity curve is from an October 1972 survey. Elevation record provided by the city of Corpus Christi and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 320,000 acre-ft Sept. 22, 1967 and Sept. 12, 1971; maximum elevation, 94.82 ft Sept. 22, 1967; minimum contents, 14,740 acre-ft May 5, 1951 (elevation, 67.62 ft).

EXTREMES (AT 0600) FOR CURRENT YEAR.--Maximum contents, 274,300 acre-ft Oct. 30, Nov. 2, 7, 8, 14-18, 20, 25-29, Dec. 1-5 (elevation, 94.1 ft); minimum, 211,200 acre-ft Sept. 29 and 30 (elevation, 90.6 ft).

Capacity table (elevation, in feet, and contents, in acre-feet)

90.0	201,400	94.0	272,400
92.0	235,300	95.0	292,100

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 0600

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	228200	272400	274300	264700	257100	253400	238800	226500	216200	266600	242400	223000
2	231700	274300	274300	264700	257100	253400	238800	226500	216200	266600	240600	223000
3	238800	272400	274300	264700	257100	253400	237000	224800	216200	264700	240600	221300
4	240600	272400	274300	264700	262800	253400	237000	224800	216200	264700	238800	221300
5	240600	272400	274300	264700	260900	251600	237000	223000	219600	262800	238800	221300
6	238800	272400	272400	262800	260900	251600	237000	223000	221300	262800	237000	221300
7	238800	274300	272400	262800	260900	251600	237000	223000	223000	260900	238800	221300
8	238800	274300	272400	266600	260900	249700	235300	221300	224800	260900	238800	221300
9	238800	272400	272400	264700	260900	249700	235300	221300	228200	260900	237000	221300
10	237000	272400	272400	262800	262800	249700	235300	221300	231700	259000	235300	219600
11	237000	272400	272400	262800	260900	249700	235300	223000	231700	257100	235300	219600
12	237000	272400	272400	262800	259000	249700	235300	223000	235300	257100	235300	219600
13	237000	272400	272400	262800	259000	249700	233500	221300	237000	257100	235300	219600
14	237000	274300	270400	260900	259000	247900	233500	221300	238800	257100	233500	219600
15	237000	274300	270400	260900	259000	249700	233500	221300	242400	255300	233500	217900
16	240600	274300	270400	260900	257100	247900	233500	221300	246100	255300	233500	217900
17	244200	274300	268500	260900	257100	246100	231700	221300	249700	253400	233500	217900
18	247900	274300	268500	260900	257100	246100	231700	221300	253400	253400	231700	216200
19	251600	272400	268500	260900	257100	247900	231700	219600	259000	253400	231700	216200
20	255300	274300	268500	260900	257100	246100	231700	219600	264700	251600	230000	216200
21	257100	272400	268500	259000	257100	244200	223000	217900	266600	251600	230000	216200
22	264700	272400	268500	260900	259000	244200	223000	217900	266600	249700	230000	216200
23	272400	272400	268500	260900	257100	242400	228200	217900	268500	249700	228200	214600
24	272400	272400	266600	259000	255300	242400	228200	216200	268500	247900	228200	214600
25	272400	274300	266600	259000	255300	242400	228200	216200	270400	247900	228200	212900
26	272400	274300	266600	260900	255300	242400	228200	217900	270400	246000	226500	212900
27	272400	274300	266600	259000	255300	240600	226500	216200	268500	246000	226500	212900
28	272400	274300	266600	259000	255300	240600	226500	217900	268500	244200	226500	212900
29	272400	274300	264700	259000	---	240600	226500	216200	268500	244200	224800	211200
30	274300	272400	264700	257100	---	240600	226500	216200	268500	242400	224800	211200
31	272400	---	264700	257100	---	238800	---	216200	---	242400	224800	---
MAX	274300	274300	274300	266600	262800	253400	238800	226500	270400	266600	242400	223000
MIN	228200	272400	264700	257100	255300	238800	223000	216200	216200	242400	224800	211200
(†)	94.0	94.0	93.6	93.2	93.1	92.2	91.5	90.9	93.8	92.4	91.4	90.6
(ϕ)	+40700	0	-7700	-7600	-1800	-16500	-12300	-10300	+52300	-26100	-17600	-13600

CAL YR 1985 MAX 274300 MIN 179300 (ϕ) +85400
WTR YR 1986 MAX 274300 MIN 211200 (ϕ) -20500

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08211000 NUECES RIVER NEAR MATHIS, TX

LOCATION (revised).--Lat 28°02'17", long 97°51'36", San Patricio-Jim Wells County line, Hydrologic Unit 12110111, on left bank 169 ft downstream from pier of bridge on State Highway 359, 363 ft downstream from Texas and New Orleans Railroad Co. bridge, 0.6 mi downstream from Wesley E. Seale Dam, 4 mi southwest of Mathis, and at mile 46.7.

DRAINAGE AREA.--16,660 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 26.53 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 29, 1984, at site 163 ft upstream at datum 1.0 ft higher. Prior to Nov. 5, 1984, at site 163 ft upstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Flow is regulated by Lake Corpus Christi (station 08210500) 0.6 mi upstream. Upstream from Lake Corpus Christi, flow is affected by recharge to permeable formations, small diversions, and minor regulation. Water for municipal and industrial uses at Corpus Christi is released from Lake Corpus Christi above gage and is diverted from river at Calallen 34 mi downstream. Satellite telemeter at station.

AVERAGE DISCHARGE.--47 years, 801 ft³/s (580,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 138,000 ft³/s Sept. 24, 1967 (gage height, 48.7 ft, from floodmark), present datum; minimum daily, 6.8 ft³/s Aug. 15, 1940.
Maximum stage since at least 1888, that of Sept. 24, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of about 41 ft, present datum, occurred Sept. 20, 1919, from information by Texas and New Orleans Railroad Co. and is the second highest known.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,630 ft³/s Nov. 2 at 0500 hours (gage height, 22.15 ft); minimum daily, 68 ft³/s Feb. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	3370	1190	99	94	100	113	120	103	165	207	166
2	69	4100	570	100	94	100	156	117	105	168	198	166
3	69	2570	853	101	105	104	149	119	105	172	195	158
4	82	3540	762	109	90	116	139	119	118	195	195	134
5	100	4860	401	130	182	127	135	113	126	171	198	143
6	105	4100	178	86	95	132	135	115	131	138	161	144
7	105	3710	164	87	70	129	130	121	131	155	150	139
8	104	3820	155	365	89	128	125	151	132	183	187	139
9	102	3600	145	262	101	112	125	159	127	202	173	135
10	98	2010	137	89	125	112	123	143	123	195	160	127
11	96	283	553	79	76	109	117	128	123	196	183	111
12	96	228	319	98	68	106	118	127	124	195	170	161
13	96	253	471	99	81	103	119	107	124	193	157	150
14	99	243	256	85	90	105	126	114	124	186	154	139
15	129	317	131	70	90	108	136	118	125	184	145	151
16	109	384	138	87	90	110	140	122	133	186	151	162
17	98	893	151	98	96	126	144	131	153	187	147	162
18	99	873	161	98	100	162	140	126	160	175	163	155
19	104	379	138	97	100	149	142	120	135	180	213	141
20	91	515	128	98	100	148	149	121	126	173	172	121
21	87	218	129	98	105	143	148	127	126	177	173	107
22	78	177	127	87	123	144	140	133	126	182	126	113
23	3380	176	134	74	101	142	145	132	128	182	122	135
24	4980	247	185	85	100	131	153	132	143	187	143	137
25	4550	884	131	107	100	125	151	132	146	201	131	152
26	4120	2000	117	106	100	120	152	132	128	205	143	158
27	4190	3180	108	94	107	127	145	138	135	190	171	151
28	5090	3770	111	85	111	133	143	141	136	189	166	148
29	4800	4150	104	80	---	134	141	123	139	198	166	123
30	4440	3070	104	79	---	133	125	104	147	208	160	117
31	3240	---	113	83	---	109	---	104	---	205	165	---
TOTAL	40876	57920	8364	3315	2783	3827	4104	3889	3882	5723	5145	4245
MEAN	1319	1931	270	107	99.4	123	137	125	129	185	166	142
MAX	5090	4860	1190	365	182	162	156	159	160	208	213	166
MIN	69	176	104	70	68	100	113	104	103	138	122	107
AC-FT	81080	114900	16590	6580	5520	7590	8140	7710	7700	11350	10210	8420

CAL YR 1985 TOTAL 236812 MEAN 649 MAX 5090 MIN 24 AC-FT 469700
WTR YR 1986 TOTAL 144073 MEAN 395 MAX 5090 MIN 68 AC-FT 285800

08211000 NUECES RIVER NEAR MATHIS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1947 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1947 to current year.
WATER TEMPERATURES: October 1947 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,580 microsiemens Apr. 19, 20, 1977; minimum daily, 216 microsiemens Sept. 19, 1971.
WATER TEMPERATURES (1947-76, 1980-86): Maximum daily, 36.0°C Aug. 8, 1964; minimum daily, 3.0°C Jan. 19, 1968.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 620 microsiemens Oct. 3; minimum daily, 413 microsiemens Feb. 23.
WATER TEMPERATURES: Maximum daily, 32.0°C July 10; minimum daily, 11.0°C Jan. 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
NOV									
01...	1600	2480	530	--	24.0	150	3	49	5.5
DEC									
10...	0948	63	406	--	17.5	130	0	44	4.4
JAN									
29...	1817	83	420	--	16.0	130	0	43	4.3
JUN									
16...	1436	140	515	--	23.5	140	0	47	5.7
JUL									
30...	1315	178	516	7.50	29.5	150	19	51	5.8

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
NOV									
01...	45	2	4.1	142	24	63	0.2	15	290
DEC									
10...	35	1	6.9	129	17	43	0.2	17	240
JAN									
29...	35	1	7.7	132	15	40	0.2	16	240
JUN									
16...	46	2	8.1	--	23	49	0.2	20	--
JUL									
30...	44	2	9.0	132	28	57	0.3	1.2	280

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1985	40876	546	317	35000	70	7690	42	4620	160
NOV.	1985	57920	487	283	44300	59	9180	37	5860	150
DEC.	1985	8364	434	253	5720	49	1120	33	756	130
JAN.	1986	3315	434	253	2270	49	442	33	300	130
FEB.	1986	2783	437	255	1920	50	376	34	254	130
MAR.	1986	3827	432	252	2610	49	507	33	345	130
APR.	1986	4104	450	262	2910	52	577	35	385	140
MAY	1986	3889	472	275	2890	56	587	36	382	140
JUNE	1986	3882	491	286	3000	59	622	38	396	150
JULY	1986	5723	510	297	4580	63	971	39	606	150
AUG.	1986	5145	547	317	4410	70	970	42	583	160
SEPT	1986	4245	568	329	3770	74	848	44	499	170
TOTAL		144073	**	**	113000	**	23900	**	15000	**
WTD.AVG.		395	501	291	**	61	**	39	**	150

08211000 NUECES RIVER NEAR MATHIS, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	568	518	432	433	430	429	437	474	465	495	529	562
2	567	516	427	430	438	429	437	460	480	488	533	562
3	620	517	430	460	427	432	468	459	478	487	533	564
4	567	522	428	431	515	427	442	460	478	485	536	562
5	558	517	438	432	429	430	443	477	480	493	536	556
6	562	506	447	428	489	430	473	471	472	496	538	554
7	560	496	445	433	452	429	445	466	476	494	540	554
8	566	489	446	418	441	427	443	460	480	496	536	562
9	563	489	446	418	443	433	447	461	483	498	534	566
10	566	489	425	523	425	436	447	462	482	491	536	583
11	563	496	419	447	450	439	442	469	502	493	544	588
12	569	489	428	448	488	437	443	482	488	504	544	565
13	568	484	427	478	431	430	445	484	488	505	548	572
14	566	485	436	441	431	428	445	476	478	502	548	570
15	558	479	446	442	435	429	456	469	478	514	562	572
16	560	481	434	428	436	431	460	468	505	518	546	570
17	574	478	425	427	426	429	450	458	490	522	546	558
18	558	478	433	425	425	430	450	460	478	517	545	578
19	557	475	503	424	431	432	439	468	518	522	548	575
20	555	479	483	425	430	433	450	473	516	522	549	578
21	581	466	453	427	426	433	447	469	510	519	557	578
22	568	475	442	430	419	425	450	469	512	518	573	569
23	553	471	463	433	413	424	457	472	503	520	571	577
24	545	470	426	425	432	433	450	484	504	525	569	570
25	547	462	435	424	431	434	450	483	506	530	562	568
26	552	457	433	423	433	435	452	473	500	531	558	569
27	549	450	429	429	430	437	454	474	492	523	562	569
28	547	447	420	438	432	435	456	477	490	527	554	571
29	548	442	420	435	---	440	453	503	500	526	558	572
30	533	450	433	435	---	439	456	487	492	516	556	572
31	534	---	419	430	---	440	---	489	---	529	556	---
MEAN	561	482	438	436	439	432	450	472	491	510	549	569

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	23.5	21.0	15.0	15.5	18.0	21.5	25.0	28.0	30.0	30.0	29.0
2	26.0	23.0	20.0	15.5	15.0	18.0	21.0	25.0	27.0	30.0	30.0	29.0
3	26.0	23.0	18.5	15.5	15.5	18.0	21.0	25.0	28.0	30.0	30.0	29.0
4	27.0	23.0	18.0	15.5	15.5	18.0	21.0	25.0	27.5	30.0	30.0	29.0
5	27.0	23.0	17.5	15.0	15.5	18.5	21.5	25.0	29.0	30.0	29.5	29.0
6	25.0	22.5	17.5	14.5	18.0	20.0	21.5	25.0	28.5	30.0	30.0	29.0
7	26.0	21.5	17.5	14.5	18.0	18.0	22.5	25.0	29.0	30.0	30.0	29.0
8	25.5	21.5	17.5	13.5	15.0	20.0	24.0	25.0	30.0	30.0	30.0	29.0
9	25.0	21.0	17.5	11.0	14.0	20.0	23.0	25.0	29.0	30.0	30.0	29.5
10	27.0	21.0	18.0	13.0	14.0	21.0	22.0	25.0	29.0	32.0	30.0	30.0
11	27.0	21.5	16.5	15.0	14.0	20.0	23.0	26.5	29.5	31.0	30.0	30.0
12	27.5	22.0	15.0	16.0	14.0	21.0	24.0	27.0	29.5	29.0	30.0	30.0
13	27.0	21.5	15.0	15.0	14.5	20.5	24.0	26.0	29.5	29.0	30.0	30.0
14	27.0	22.5	15.0	15.0	15.0	20.5	23.0	26.0	29.5	30.0	30.5	30.0
15	26.5	22.5	15.0	14.0	15.0	21.0	23.5	25.5	30.0	30.0	30.0	30.0
16	26.0	22.0	16.0	13.5	17.0	22.0	22.0	26.0	30.0	31.0	30.5	30.0
17	25.0	22.0	15.0	14.0	17.0	21.0	22.5	26.5	30.0	30.0	30.5	30.0
18	25.0	22.0	15.0	14.0	17.5	21.5	23.0	26.0	29.5	30.0	30.5	30.0
19	26.0	23.0	15.5	14.5	17.5	21.0	23.0	26.5	31.0	30.0	30.5	30.0
20	26.0	19.0	15.0	14.5	17.5	21.5	24.0	26.5	31.0	30.0	31.0	29.0
21	25.0	20.5	15.0	14.5	15.0	21.0	24.0	27.0	31.0	30.0	30.0	29.0
22	27.0	20.5	15.0	14.0	15.0	21.5	24.0	27.0	31.0	30.0	30.0	29.0
23	27.0	21.0	16.0	14.0	15.5	21.5	24.0	27.0	30.5	30.0	30.0	29.0
24	27.5	21.0	15.0	15.0	17.0	21.0	24.0	27.5	30.5	30.0	30.0	29.0
25	27.0	21.0	15.0	15.0	17.0	21.0	24.0	27.5	31.0	30.0	30.0	29.0
26	27.0	21.5	---	15.0	17.5	21.5	24.0	27.0	30.0	30.0	30.0	29.0
27	26.0	21.5	14.0	15.0	18.0	20.0	24.0	27.0	30.0	30.0	30.0	29.0
28	24.5	21.5	15.0	15.0	18.0	21.0	24.5	27.5	30.0	30.0	29.5	29.0
29	24.0	21.5	15.0	15.0	---	21.5	24.5	28.0	30.0	31.0	29.5	29.0
30	24.0	21.5	15.0	16.0	---	21.5	24.5	28.0	30.0	31.0	29.5	29.0
31	24.0	---	15.0	15.5	---	21.5	---	28.0	---	30.0	29.5	---
MEAN	26.0	22.0	16.0	14.5	16.0	20.5	23.0	26.5	29.5	30.0	30.0	29.5

08211520 OSO CREEK AT CORPUS CHRISTI, TX

LOCATION.--Lat 27°42'40", long 97°30'06", Nueces County, Hydrologic Unit 12110202, on left downstream end of bridge on Farm Road 763, 1.5 mi south of intersection of Farm Roads 763 and 665, 1.6 mi downstream from mouth of West Oso Creek, and 1.9 mi southwest of intersection of Farm Road 665 and State Highway 357.

DRAINAGE AREA.--90.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1.91 ft below National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 28 to Jan. 7, Jan. 9, 14, 17, 18, Jan. 21 to Feb. 2, Feb. 7 to May 25, June 27 to Aug. 4, and Aug.13 to Sept. 2. Records fair prior to Sept. 3 and good thereafter. No known diversions above station. An undetermined amount of water from oilfield operations enters stream upstream at various points.

AVERAGE DISCHARGE.--14 years, 32.9 ft³/s (23,840 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft³/s Aug. 10, 1980 (gage height, 29.37 ft); minimum, 0.25 ft³/s Aug. 26, 27, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 24.5 ft occurred in May 1968, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 1	0100	a*2,480	Unknown	No other peak greater than base discharge.			

a Stage falling. Peak occurred Sept. 30, 1985.

Minimum daily discharge, 1.4 ft³/s Sept. 13-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1510	7.5	6.5	4.2	2.2	3.0	2.6	2.9	8.8	6.2	2.7	3.8
2	366	749	5.4	4.1	2.1	3.0	2.6	2.8	52	5.6	2.6	4.5
3	159	535	5.2	4.0	3.0	2.9	2.6	6.0	25	5.2	2.5	1.5
4	73	262	5.2	4.0	11	2.9	2.6	9.8	7.5	4.9	2.4	1.6
5	27	110	4.9	3.9	19	3.0	2.6	8.8	4.3	4.7	59	2.0
6	15	40	4.9	3.9	14	3.0	2.6	6.8	8.7	4.4	84	2.2
7	9.4	19	4.9	3.9	6.4	3.0	2.7	5.4	3.1	4.2	52	2.0
8	6.1	12	4.9	134	4.8	3.4	2.7	4.9	99	4.1	33	2.5
9	5.5	7.1	4.9	91	4.3	3.6	3.1	4.6	224	4.0	22	2.0
10	6.1	6.7	4.9	19	4.2	3.2	3.6	7.0	38	3.8	19	1.7
11	5.1	37	8.1	8.8	4.1	3.1	3.4	12	18	3.7	16	1.7
12	4.7	28	9.8	6.4	4.1	3.0	3.1	7.6	12	3.6	15	1.6
13	5.4	14	9.8	5.0	4.4	2.9	2.9	5.6	14	3.5	19	1.4
14	5.0	8.1	9.4	4.5	4.4	2.8	2.8	5.0	15	3.4	14	1.4
15	26	5.4	6.9	4.0	4.1	2.8	2.7	4.6	14	3.4	7.0	1.4
16	117	4.6	6.2	4.0	3.9	2.8	1.9	4.9	15	3.3	3.8	1.4
17	60	4.0	5.4	3.7	3.8	2.7	2.7	5.0	11	3.2	3.4	1.4
18	22	3.7	6.1	3.2	3.7	2.7	2.6	5.8	9.6	3.1	3.1	1.5
19	11	3.4	16	3.1	3.6	2.7	3.0	5.6	8.8	3.0	3.2	1.5
20	7.3	3.2	16	2.6	3.5	2.7	4.0	5.3	9.0	3.0	3.3	2.6
21	315	3.6	12	2.6	3.4	2.7	3.4	5.2	9.4	3.0	3.2	2.0
22	540	3.7	8.2	2.5	3.3	2.7	2.9	5.0	9.3	3.0	3.2	2.1
23	327	3.8	7.1	2.4	3.3	2.7	2.8	4.9	16	2.9	3.3	1.8
24	81	4.5	5.6	2.3	3.2	2.7	2.7	4.8	34	2.9	3.8	1.6
25	30	5.9	5.3	2.3	3.2	2.7	2.7	4.7	16	2.9	2.7	1.4
26	17	6.8	5.0	2.2	3.1	2.7	2.6	11	12	2.9	2.4	1.6
27	15	6.5	4.8	2.2	3.1	2.7	2.6	11	10	2.9	2.2	1.5
28	15	9.1	4.6	2.2	3.1	2.7	2.6	5.4	8.8	2.8	2.0	1.9
29	14	9.1	4.4	2.2	---	2.7	3.1	5.2	7.7	2.8	2.2	1.9
30	10	8.8	4.3	2.2	---	2.7	3.0	5.0	6.8	2.8	2.5	1.9
31	5.9	---	4.2	2.2	---	2.6	---	17	---	3.2	2.4	---
TOTAL	3810.5	1921.5	210.9	342.6	136.3	88.8	85.2	199.6	726.8	112.4	396.9	57.4
MEAN	123	64.0	6.80	11.1	4.87	2.86	2.84	6.44	24.2	3.63	12.8	1.91
MAX	1510	749	16	134	19	3.6	4.0	17	224	6.2	84	4.5
MIN	4.7	3.2	4.2	2.2	2.1	2.6	1.9	2.8	3.1	2.8	2.0	1.4
AC-FT	7560	3810	418	680	270	176	169	396	1440	223	787	114

CAL YR 1985 TOTAL 10744.1 MEAN 29.4 MAX 1990 MIN 1.0 AC-FT 21310
WTR YR 1986 TOTAL 8088.9 MEAN 22.2 MAX 1510 MIN 1.4 AC-FT 16040

08211520 OSO CREEK AT CORPUS CHRISTI, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: July 1972 to current year. Pesticide analyses: July 1972 to July 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3
NOV 20...	1110	2.5	5120	8.10	18.5	29	8.2	88	2.7	910	700
JAN 08...	1040	60	727	7.83	6.5	100	12.5	--	>7.8	130	90
FEB 27...	0953	0.89	5800	8.10	19.5	29	9.2	102	2.8	1000	800
MAY 07...	1407	2.2	6680	7.84	26.5	--	6.8	86	4.7	880	670
JUN 19...	1110	3.1	3690	7.70	28.5	35	5.8	--	2.1	640	470
AUG 19...	1325	2.7	4340	7.80	33.5	71	6.4	--	0.9	670	500

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV 20...	280	50	850	13	23	202	270	1700	0.4	20	3300
JAN 08...	42	6.7	100	4	4.9	43	44	200	0.2	5.3	430
FEB 27...	310	59	960	14	19	215	370	1900	0.7	14	3800
MAY 07...	270	50	1000	15	19	210	290	2000	0.6	25	3800
JUN 19...	200	35	550	10	15	176	180	1000	0.8	21	2100
AUG 19...	210	35	730	13	15	169	230	1400	0.7	16	2700

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)
NOV 20...	149	2.47	0.03	2.50	0.24	2.0	2.2	1.60	11	--	--
JAN 08...	1440	1.43	0.07	1.50	0.49	1.4	1.9	1.00	31	11	70
FEB 27...	70	3.06	0.04	3.10	0.11	1.4	1.5	5.00	19	--	--
MAY 07...	--	1.74	0.06	1.80	--	--	1.1	5.80	--	--	--
JUN 19...	83	1.16	0.04	1.20	0.11	1.1	1.2	0.17	9.7	--	--
AUG 19...	165	1.04	0.06	1.10	0.19	0.51	0.7	2.50	12	21	200

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 20...	--	--	--	--	--	--	--	--	--	--
JAN 08...	<1	<10	1	73	<1	42	<0.1	<1	2	11
FEB 27...	--	--	--	--	--	--	--	--	--	--
MAY 07...	--	--	--	--	--	--	--	--	--	--
JUN 19...	--	--	--	--	--	--	--	--	--	--
AUG 19...	1	<10	1	80	<5	240	<0.1	<1	<1	20

08211800 SAN DIEGO CREEK AT ALICE, TX

LOCATION.--Lat 27°45'59", long 98°04'31", Jim Wells County, Hydrologic Unit 12110204, at bridge on Edith Drive in Alice, 540 ft downstream from Texas and New Orleans Railroad Co. bridge, and 3.2 mi upstream from confluence with Chiltipin Creek.

DRAINAGE AREA.--319 mi².

PERIOD OF RECORD.--September 1963 to current year.

REVISED RECORDS.--WDR TX-72-1: 1971.

GAGE.--Water-stage recorder. Datum of gage is 189.60 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures with a combined detention capacity of 35,980 acre-ft. These structures control runoff from 170 mi² in the San Diego-Rosita drainage basins.

AVERAGE DISCHARGE.--23 years, 8.15 ft³/s (5,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft³/s Oct. 17, 1971 (gage height, 17.70 ft); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1928, 18.2 ft April 1949, equivalent gage height in channel modified in 1955, 17.2 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 8	0200	320	6.39	June 11	2300	*477	*6.71

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.23	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	4.2	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	2.5	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.56	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.20	.00	.00	.00	.70	.00	.00	.00
8	.00	.00	.00	.15	.10	.00	.00	.00	88	.00	.00	.00
9	.00	.00	.00	.04	.05	.00	.00	.00	31	.00	.00	.00
10	.00	.00	.00	.01	.03	.00	.00	.00	7.9	.00	.00	.00
11	.00	.00	.00	.02	.01	.00	.00	.00	58	.00	.00	.00
12	.00	.00	.00	.02	.01	.00	.00	.00	78	.00	.00	.00
13	.00	.00	.00	.01	.00	.00	.00	.00	10	.00	.00	.00
14	.00	.00	.00	.00	.01	.00	.00	.00	2.8	.00	.00	.00
15	.03	.00	.00	.00	.01	.00	.00	.00	1.0	.00	.00	.00
16	.00	.00	.00	.00	.01	.00	.00	.00	1.1	.00	.00	.00
17	.00	.00	.00	.00	.02	.00	.00	.00	.59	.00	.00	.00
18	.00	.00	.00	.00	.01	.00	.00	.00	.45	.00	.00	.00
19	.00	.00	.00	.00	.01	.00	.00	.00	.19	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00
21	.39	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00
22	.08	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00
28	.00	.02	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
29	.00	.04	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.02	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.65	.08	.00	.25	7.96	.00	.00	.35	279.88	.00	.00	.00
MEAN	.02	.00	.00	.01	.28	.00	.00	.01	9.33	.00	.00	.00
MAX	.39	.04	.00	.15	4.2	.00	.00	.20	88	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1.3	.2	.00	.5	16	.00	.00	.7	555	.00	.00	.00

CAL YR 1985 TOTAL 1675.23 MEAN 4.59 MAX 632 MIN .00 AC-FT 3320
WTR YR 1986 TOTAL 289.17 MEAN .79 MAX 88 MIN .00 AC-FT 574

08211850 LAKE ALICE AT ALICE, TX

LOCATION.--Lat 27°47'25", long 98°03'39", Jim Wells County, Hydrologic Unit 12110204, on right bank just upstream from Alice Dam on Chiltipin Creek, 1.8 mi upstream from confluence of Chiltipin and San Diego Creeks, and 2.6 mi northeast of Alice.

DRAINAGE AREA.--150 mi^2.

PERIOD OF RECORD.--December 1964 to September 1986 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of Alice).

REMARKS.--The lake is formed by a rolled earthfill dam 11,525 ft long. The dam consists of the main embankment 3,470 ft long and two protective levees. The west protective levee is 4,275 ft long and the east protective levee is 2,343 ft long. Storage began Oct. 26, 1964, and the dam was completed Mar. 16, 1965. The spillway, 1,000 ft wide, is located between the main embankment and the west levee. Collapsible flashboards, 3.5 ft high, were added to the crest of the spillway. The main spillway is 414 ft wide with thirteen 30-foot-wide slots for gates, but no gates have been installed at the present time. The main spillway is located between the main embankment and the east levee. The spillway is a concrete siphon-type spillway, 22.5 ft wide with a 3.5-foot opening, and is in the main embankment section. The dam is the property of the Alice Water Authority and was built to store water for use by the city of Alice. The area and capacity tables are based on revised maps surveyed in 1963. Flow is affected at times by discharge from flood-detention pools of eight floodwater-retarding structures with a combined detention capacity of 25,160 acre-ft. These structures control runoff from 131 mi^2. Records provided by the city of Alice show that 3,430 acre-ft was diverted during the current year for municipal use. Records provided by the city of Corpus Christi show that 4,620 acre-ft was diverted to Lake Alice from Lake Corpus Christi during the current year. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	205.0	-
Top of west levee	202.0	-
Top of collapsible flashboards	199.5	5,300
Top of east levee	199.0	4,910
Crest of main spillway	196.5	3,110
Crest of spillway	196.0	2,780
Crest of siphon spillway (lowest outlet)	196.0	2,780

COOPERATION.--The area and capacity tables are provided by the Alice Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,780 acre-ft Sept. 12, 1971 (elevation, 198.83 ft, from floodmark); minimum, 14 acre-ft Feb. 3, 1965 (elevation, 185.67 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 818 acre-ft June 14 at 2200 hours (elevation, 192.17 ft); minimum, 87 acre-ft Sept. 24 (elevation, 189.07 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

189.0	82	192.0	754
190.0	195	193.0	1,160
191.0	423		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	450	347	581	389	414	234	548	191	248	481	162	344
2	423	344	621	375	432	220	545	202	237	450	162	347
3	409	333	662	361	535	206	548	220	225	423	169	355
4	386	325	718	344	659	189	555	232	211	394	173	377
5	358	328	762	323	659	176	565	239	194	369	176	389
6	336	317	788	305	648	173	568	250	182	341	182	397
7	312	305	803	288	635	183	581	258	213	323	188	409
8	288	277	799	275	614	215	561	260	246	300	191	403
9	268	266	776	271	598	246	532	268	312	279	195	380
10	252	252	762	260	581	282	503	300	303	252	200	344
11	234	234	747	250	565	330	481	310	432	225	205	317
12	220	221	725	241	545	358	459	320	497	208	213	291
13	203	211	715	232	532	394	426	333	701	195	220	268
14	195	206	697	223	519	420	409	344	818	185	223	246
15	188	200	655	216	497	435	383	355	806	175	232	225
16	189	189	638	200	487	435	355	369	795	158	239	205
17	189	180	621	200	472	441	333	383	776	142	246	182
18	188	175	604	215	453	456	320	366	762	127	254	165
19	215	176	591	223	432	453	298	344	743	116	260	147
20	284	185	565	235	409	453	277	317	725	103	258	134
21	344	210	555	243	386	453	258	293	708	99.9	260	122.0
22	409	252	542	254	369	459	239	277	683	103	268	107.0
23	447	288	523	260	347	466	221	277	680	112	284	93.2
24	472	344	510	282	330	472	203	279	652	117	293	92.4
25	481	400	494	305	307	478	183	305	641	123	298	97.2
26	453	429	478	333	291	491	165	315	618	128	305	104
27	453	459	462	358	268	500	154	325	591	133	310	112
28	441	478	444	366	250	510	150	303	571	137	320	122
29	435	503	432	366	---	516	169	284	539	146	325	131
30	391	539	414	377	---	523	179	271	507	151	336	140
31	372	---	400	394	---	542	---	260	---	155	338	---
MAX	481	539	803	394	659	542	581	383	818	481	338	409
MIN	188	175	400	200	250	173	150	191	182	99	162	92
(†)	190.82	191.37	190.92	190.90	190.32	191.38	189.89	190.37	191.27	189.72	190.70	189.61
(♦)	-97	+167	-139	-6	-144	+292	-363	+81	+247	-352	+183	-198

CAL YR 1985 MAX 2050 MIN 175 (♦) -75
WTR YR 1986 MAX 818 MIN 92 (♦) -329

(†) Elevation, in feet, at end of month.
(♦) Change in contents, in acre-feet.

08211900 SAN FERNANDO CREEK AT ALICE, TX

LOCATION.--Lat 27°46'20", long 98°02'00", Jim Wells County, Hydrologic Unit 12110204, on left bank 34 ft downstream from downstream bridge of two bridges on State Highways 44 and 359, 0.5 mi downstream from confluende of San Diego and Chiltipin Creeks, 2.3 mi upstream from head of Pintas Creek, and 2.7 mi northeast of Alice.

DRAINAGE AREA.--507 mi^2.

PERIOD OF RECORD.--December 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 161.68 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: July 2-6, July 11, and July 19-23. Records good. San Diego Creek joins Chiltipin Creek below Lake Alice to form San Fernando Creek. Flow is regulated by Lake Alice (station 08211850) 2.3 mi upstream from Chiltipin Creek since Oct. 26, 1964. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08211800. Records furnished by city of Alice show that 2,270 acre-ft of sewage effluent was discharged into San Diego Creek 1.3 mi upstream, which comprises most of the low flow. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--21 years (water years 1966-86), 22.5 ft^3/s (16,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,800 ft^3/s Sept. 12, 1971 (gage height, 16.51 ft); minimum daily, 0.2 ft^3/s Aug. 2 and Sept. 16, 1965.

Maximum stage since at least 1949, that of Sept. 12, 1971. Another high stage for this period was 15.86 ft Sept. 23, 1967 (discharge, 16,900 ft^3/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Other high stages since at least 1949 are 15.5 ft Sept. 9, 1962 (discharge, 14,600 ft^3/s from field estimate), and 14.2 ft Sept. 14, 1951. Discharge for flood of Sept. 14, 1951, may have exceeded that for 1962 as the highway was raised between 1952 and 1962. Flood in 1951 was higher at site of discontinued station "San Fernando Creek near Alice." Flood in 1962 was higher than that of 1967 at site of discontinued station; there is a diversion into the Pintas Creek basin between the two gaging sites, and apparently this diversion was greater in 1967 than in 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 970 ft^3/s June 12 at 0800 hours (gage height, 6.28 ft); minimum daily, 0.30 ft^3/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	18	1.4	2.0	2.1	1.9	1.5	1.4	1.4	1.3	1.7	1.8
2	1.7	6.6	1.5	2.1	2.0	1.6	1.4	1.6	1.5	1.3	1.6	1.1
3	1.8	1.8	1.6	2.2	2.5	1.6	2.0	1.4	1.5	1.3	1.6	1.1
4	2.1	1.3	1.6	2.0	72	1.5	1.7	1.6	1.5	1.3	1.8	1.6
5	1.7	1.3	1.7	1.9	12	1.6	1.4	1.8	1.5	1.2	1.8	1.9
6	1.7	1.3	1.6	1.8	3.7	1.6	1.3	1.4	1.5	1.2	2.0	2.3
7	1.9	1.3	1.6	2.0	2.7	1.6	1.3	.81	2.9	1.2	2.0	2.1
8	1.9	1.6	1.6	2.5	2.2	1.5	1.4	1.1	188	1.2	2.0	2.2
9	2.1	1.5	1.8	2.2	1.9	1.5	1.4	1.9	135	1.0	1.7	1.9
10	2.1	1.5	1.9	2.0	1.9	1.6	1.4	2.0	33	.99	1.4	1.3
11	1.9	1.7	1.8	1.9	1.8	1.8	1.5	1.9	11	1.0	1.3	1.2
12	1.7	1.5	1.9	1.9	1.8	1.6	1.5	1.9	468	1.1	1.6	.92
13	2.0	1.5	1.9	1.9	1.7	1.5	1.3	1.9	110	1.3	1.6	1.9
14	2.2	1.5	2.0	1.7	1.9	1.5	1.4	1.8	332	1.3	1.6	2.0
15	3.5	1.7	1.9	2.1	1.8	1.6	1.4	1.9	26	1.5	1.3	2.1
16	2.3	1.5	1.9	2.1	1.8	1.6	1.4	1.9	9.0	1.3	1.4	1.9
17	2.4	1.5	1.9	2.2	1.6	1.6	1.5	1.9	4.4	1.3	1.5	2.2
18	2.4	1.6	2.1	2.5	1.8	1.6	1.5	1.9	3.2	1.3	1.5	2.3
19	2.4	1.8	2.2	2.2	1.7	1.6	1.4	1.9	2.6	1.2	1.5	1.8
20	2.8	1.6	2.1	1.9	1.7	1.8	1.4	2.2	2.3	1.2	1.3	2.0
21	6.7	1.6	2.0	2.0	1.5	1.6	1.6	1.6	1.8	1.1	.30	2.3
22	25	1.7	2.0	2.0	1.6	1.5	1.3	1.4	1.5	1.1	1.1	2.4
23	3.9	1.7	2.0	2.0	1.6	1.5	1.3	2.0	1.6	1.2	.84	2.4
24	1.9	1.7	2.0	2.2	1.6	1.5	1.3	2.1	1.6	1.0	1.5	2.2
25	1.5	1.7	1.9	2.1	1.6	1.6	1.4	2.0	1.5	1.0	1.4	2.4
26	1.3	1.6	1.8	1.9	1.6	1.4	1.4	2.8	1.4	.91	2.0	2.4
27	1.1	1.9	2.0	2.0	1.6	1.6	1.4	2.8	1.4	.86	2.0	2.3
28	1.2	1.5	2.0	2.2	1.7	1.8	1.3	3.0	1.2	1.0	1.7	2.4
29	1.1	1.4	1.9	2.2	---	1.5	1.3	1.8	1.3	1.3	1.0	2.4
30	1.2	1.5	2.1	2.2	---	1.5	1.5	1.8	1.5	1.3	2.0	2.5
31	1.3	---	2.1	2.1	---	1.5	---	1.9	---	1.5	1.9	---
TOTAL	88.5	68.4	57.8	64.0	133.4	49.2	42.9	57.41	1351.1	36.76	47.94	59.32
MEAN	2.85	2.28	1.86	2.06	4.76	1.59	1.43	1.85	45.0	1.19	1.55	1.98
MAX	25	18	2.2	2.5	72	1.9	2.0	3.0	468	1.5	2.0	2.5
MIN	1.1	1.3	1.4	1.7	1.5	1.4	1.3	.81	1.2	.86	.30	.92
AC-FT	176	136	115	127	265	98	85	114	2680	73	95	118

CAL YR 1985 TOTAL 6442.2 MEAN 17.6 MAX 2140 MIN 1.0 AC-FT 12780
WTR YR 1986 TOTAL 2056.73 MEAN 5.63 MAX 468 MIN .30 AC-FT 4080

08364000 RIO GRANDE AT EL PASO, TX

LOCATION.--Lat 31°48'10", long 106°32'25", El Paso County, Hydrologic Unit 13030102, at gaging station on the downstream side of the Courchesne Bridge, 5.6 mi upstream from the Santa Fe Street-Juarez Avenue bridge between El Paso, Tex., and Cd. Juarez, Mex., and 1.7 mi upstream from the American Dam.

DRAINAGE AREA.--29,267 mi .

PERIOD OF RECORD.--Chemical analyses: February 1930 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1986 are given in International Boundary and Water Commission Water Bulletins Nos. 55 and 56.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
OCT									
17...	1425	578	1350	7.80	13.5	300	120	89	19
NOV									
20...	1325	166	2080	7.80	5.5	490	230	140	33
DEC									
17...	1340	167	2040	7.90	4.0	440	190	130	29
JAN									
13...	1235	109	2070	8.10	5.0	450	190	130	30
FEB									
21...	0910	642	1050	7.80	6.5	250	74	74	16
MAR									
18...	0930	1300	772	7.80	3.5	200	49	59	12
APR									
14...	0935	769	1040	7.80	16.5	240	68	73	15
MAY									
19...	0900	1270	831	--	13.0	220	64	67	14
JUN									
17...	0845	2730	733	7.60	18.5	200	45	59	12
JUL									
15...	0910	1900	779	7.70	23.0	190	53	57	12
AUG									
19...	1030	1080	940	7.80	18.0	230	64	69	14
SEP									
24...	0930	834	1180	7.80	18.0	270	85	79	17

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT								
17...	170	4	8.2	176	280	160	17	850
NOV								
20...	300	6	10	259	460	280	23	1400
DEC								
17...	290	6	10	252	490	260	22	1400
JAN								
13...	300	6	10	263	510	250	22	1400
FEB								
21...	120	3	6.3	177	210	100	10	640
MAR								
18...	82	3	5.4	148	150	63	9.9	470
APR								
14...	110	3	6.8	176	200	85	13	610
MAY								
19...	90	3	6.1	161	170	65	13	520
JUN								
17...	74	2	5.8	152	140	56	13	450
JUL								
15...	73	2	5.4	139	130	47	15	420
AUG								
19...	110	3	6.3	166	190	74	17	580
SEP								
24...	150	4	7.1	182	250	110	19	740

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°46'50", long 101°45'20", Val Verde County, Hydrologic Unit 13040212, at gaging station 0.1 mi downstream from Terrell-Val Verde County line, 16.9 mi from Langtry, and 597.2 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--80,742 mi , United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: April 1944 to current year. Chemical and biochemical analyses: October 1974 to current year. Pesticide analyses: July 1975 to June 1982. Sediment analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1981.
WATER TEMPERATURES: October 1974 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,110 microsiemens Dec. 4, 1974; minimum daily, 225 microsiemens May 2, 1981.
WATER TEMPERATURES: Maximum daily, 32.0°C June 13, 1977, July 25, 26 1979, July 4, 1980, and June 8, 1981; minimum daily, 9.0°C Jan. 12, 1975, Jan. 8, 1976, and Jan. 18, 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT 09...	1325	1760	1350	8.10	23.0	460	8.8	108	1.8	58	68	310
FEB 19...	1125	936	1840	7.90	18.0	17	9.6	106	1.2	K6	25	360
JUN 11...	1030	1970	1020	7.80	28.0	5000	8.2	--	0.6	2400	3200	260
AUG 13...	1110	2680	1510	8.00	27.0	300	9.2	121	1.5	220	450	290

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT 09...	150	100	1	160	4	6.8	159	330	140	0.1	20	897
FEB 19...	200	99	27	240	6	7.0	163	410	250	1.4	17	1150
JUN 11...	140	89	9.7	120	3	6.3	126	270	76	0.9	17	708
AUG 13...	130	84	20	200	5	8.2	165	320	180	1.3	18	945

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
OCT 09...	870	--	--	0.81	--	0.06	--	0.8	0.18	0.03	0.01	0.03
FEB 19...	1200	--	<0.01	0.35	0.04	0.04	0.56	0.6	0.03	<0.01	<0.01	--
JUN 11...	670	1.09	0.01	1.10	0.05	0.05	5.1	5.1	0.16	0.02	<0.01	--
AUG 13...	930	--	<0.01	0.41	0.02	0.03	0.68	0.7	0.07	<0.01	<0.01	--

DATE	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT 09...	850	4040	98	30	7	120	<0.5	<1	<1	<3	2	17
FEB 19...	81	205	83	<10	6	83	<0.5	<1	<1	<3	6	<3
JUN 11...	1020	5430	100	<10	3	83	<0.5	<1	<1	<3	<1	<3
AUG 13...	663	4800	91	--	--	--	--	--	--	--	--	--

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued

(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 09...	1	81	<1	<0.1	<10	4	2	<1	1800	9	7
FEB 19...	2	120	3	<0.1	10	8	1	<1	2100	<6	5
JUN 11...	<5	57	<1	<0.1	<10	1	2	<1	1500	<6	6
AUG 13...	--	--	--	--	--	--	--	--	--	--	--

08407500 PECOS RIVER AT RED BLUFF, NM
(National stream-quality accounting network station)

LOCATION.--Lat 32°04'30", long 104°02'21", in SW1/4 NW1/4 NE1/4 sec.1, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13060011, on right bank at Red Bluff, 0.2 mi downstream from Red Bluff Draw, 1.6 mi northwest of the El Paso Natural Gas (Pecos River) compressor station, 5.2 mi north of the New Mexico-Texas state line, 5.5 mi upstream from Delaware River, and at mile 411.2.

DRAINAGE AREA.--19,540 mi², approximately (contributing area).

PERIOD OF RECORD.--October 1937 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,850.05 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Apr. 23 to May 13 and June 24, 25. Records good except for estimated daily discharges, which are poor. Flow regulated by many reservoirs and diversion dams. Diversions and ground-water withdrawals upstream from station for irrigation of about 202,000 acres, 1959 determination.

AVERAGE DISCHARGE.--49 years, 164 ft³/s (118,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 111,000 ft³/s Aug. 23, 1966 (gage height, 33.32 ft), from rating curve extended above 32,000 ft³/s, on basis of slope-area measurement of peak flow; minimum, 0.19 ft³/s Aug. 1, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1904 reached a stage of 28.0 ft, from information by Panhandle and Santa Fe Railway Co. (For dates of other historical floods see stations 08404000, 08406500).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43,800 ft³/s June 25 (gage height, 26.76 ft³/s), from rating curve extended as explained above; minimum, 16 ft³/s part of each day May 12, 13, 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	113	70	62	72	45	39	28	67	4070	71	107
2	71	146	72	66	70	49	44	28	67	2900	68	99
3	86	141	72	66	65	54	39	29	65	1290	67	98
4	76	97	68	64	62	52	34	27	54	642	73	95
5	74	84	70	64	62	49	36	25	49	1550	81	90
6	81	81	71	62	60	49	36	22	49	847	74	102
7	85	79	69	63	50	45	34	23	50	1270	68	109
8	94	79	72	63	52	42	30	22	49	842	63	98
9	94	78	71	63	55	48	31	21	55	596	61	87
10	84	78	71	70	56	44	29	20	41	536	61	85
11	93	79	70	69	66	41	28	18	37	262	65	93
12	87	74	71	72	64	41	26	17	38	226	68	89
13	80	71	73	73	58	39	23	17	37	230	69	88
14	83	76	70	75	66	43	22	23	34	218	68	206
15	74	78	70	73	74	40	24	22	30	218	66	117
16	80	77	70	68	66	39	26	20	29	207	64	107
17	127	76	69	69	56	41	27	18	27	154	70	102
18	153	75	67	79	50	43	29	18	26	112	74	105
19	136	74	66	84	48	49	38	20	26	93	81	98
20	136	74	67	90	48	47	36	20	96	84	69	88
21	126	73	71	93	47	46	31	18	51	86	63	89
22	143	65	69	92	50	48	28	17	34	84	54	77
23	128	71	70	89	46	50	26	17	412	91	49	72
24	108	71	71	89	45	49	29	18	8320	92	68	80
25	181	71	69	89	48	48	29	19	28400	82	92	77
26	186	70	69	86	49	49	28	21	10900	80	83	71
27	123	69	68	85	47	37	26	26	8940	92	96	68
28	97	68	63	85	45	51	28	25	5510	83	98	105
29	114	71	61	84	---	49	30	27	3740	71	109	176
30	112	71	62	81	---	44	29	29	3970	68	105	79
31	115	---	61	78	---	40	---	78	---	77	102	---
TOTAL	3293	2430	2133	2346	1577	1411	915	733	71203	17253	2300	2957
MEAN	106	81.0	68.8	75.7	56.3	45.5	30.5	23.6	2373	557	74.2	98.6
MAX	186	146	73	93	74	54	44	78	28400	4070	109	206
MIN	66	65	61	62	45	37	22	17	26	68	49	68
AC-FT	6530	4820	4230	4650	3130	2800	1810	1450	141200	34220	4560	5870

CAL YR 1985 TOTAL 26334 MEAN 72.1 MAX 771 MIN 21 AC-FT 52230
WTR YR 1986 TOTAL 108551 MEAN 297 MAX 28400 MIN 17 AC-FT 215300

08408500 DELAWARE RIVER NEAR RED BLUFF, NM

LOCATION.--Lat 32°01'23", long 104°03'15", in NE1/4 SW1/4 SE1/4 sec.23, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13070002, near center of channel on downstream side of pier of bridge on U.S. Highway 285, 2.1 mi north of the New Mexico-Texas state line, 3.6 mi southwest of Red Bluff, 3.7 mi upstream from mouth, and 14 mi south of Malaga. Mouth at Pecos River mile 405.6.

DRAINAGE AREA.--689 mi^2.

PERIOD OF RECORD.--April 1912 to September 1913, May 1914 to June 1915, October 1937 to current year. Published as "near Malaga" 1912-13, and as "near Angeles, Tex." 1914-15.

GAGE.--Water-stage recorder. Elevation of gage is 2,900.66 ft above National Geodetic Vertical Datum of 1929 (U.S. Boundary Commission post). Prior to May 1914, at site 3.0 mi upstream at different datum. May 1914 to June 1915 at site 2.5 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. One small upstream diversion. Several observations of water temperatures were made during the year.

AVERAGE DISCHARGE.--49 years (1938-86), 12.9 ft^3/s (9,350 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 81,400 ft^3/s Oct. 2, 1955 (gage height, 27.0 ft), from floodmarks, from rating curve extended above 6,500 ft^3/s, on basis of slope-area measurements at gage heights, 12.84 ft, 17.55 ft, and 27.0 ft; no flow many days most years.

Maximum discharge since at least 1911 is that of Oct. 2, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 24	0945	*3,360	*8.40	Sept. 15	0030	2,060	7.49

Minimum discharge, 0.57 ft^3/s June 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	3.2	3.1	3.4	4.0	3.4	2.9	1.4	5.9	63	3.3	3.2
2	3.8	3.3	3.1	3.3	4.3	3.5	2.9	1.4	3.0	72	3.2	1.4
3	3.7	3.1	3.2	3.3	4.2	3.5	2.8	1.4	5.8	47	3.1	1.3
4	3.4	3.0	3.3	3.4	4.1	3.5	2.7	1.4	2.0	12	3.0	7.2
5	3.3	2.8	3.3	3.4	4.0	3.4	2.7	1.4	1.5	8.5	3.0	1.6
6	3.2	3.0	3.3	3.4	3.9	3.4	2.7	1.3	1.3	7.1	3.0	1.3
7	3.2	3.0	3.4	3.5	3.8	3.4	2.7	1.2	1.2	6.1	2.9	1.1
8	3.1	3.0	3.4	3.5	3.8	3.3	2.4	1.1	1.1	5.4	2.8	1.1
9	3.4	2.9	3.4	3.4	3.8	3.4	2.4	1.0	1.2	5.0	2.8	1.1
10	4.0	2.8	3.3	3.5	4.1	3.3	2.5	1.0	3.8	4.9	3.0	1.1
11	3.5	2.9	3.3	3.6	4.2	3.3	2.4	1.0	1.9	4.6	3.1	1.1
12	3.1	3.0	3.3	3.7	4.2	3.2	2.3	1.0	1.2	4.3	2.9	.97
13	3.0	3.0	3.3	3.7	4.1	3.2	2.2	.97	1.0	4.0	3.0	.97
14	2.8	3.0	3.3	3.7	4.1	3.3	2.1	.92	.92	3.8	3.0	297
15	2.8	3.0	3.2	3.8	4.0	3.4	2.0	.77	.86	3.7	30	368
16	3.1	2.9	3.3	3.8	3.9	3.4	2.1	.73	.79	3.7	14	41
17	7.0	3.0	3.3	3.7	3.8	3.3	2.1	.70	.73	3.5	2.8	23
18	4.7	3.0	3.3	3.7	3.7	3.3	2.0	.81	.72	3.3	2.4	2.9
19	3.4	3.0	3.3	3.7	3.6	3.3	2.0	.93	.74	3.2	2.3	2.2
20	4.5	3.1	3.3	3.7	3.5	3.3	1.9	.93	55	3.1	2.2	1.8
21	3.4	3.1	3.3	3.8	3.4	3.2	1.9	.82	87	3.0	2.0	1.7
22	3.2	3.2	3.3	3.7	3.4	3.3	1.9	.71	7.3	2.9	1.9	1.6
23	3.1	3.2	3.3	3.7	3.5	3.3	1.9	.64	486	3.0	3.6	1.4
24	3.0	3.2	3.3	3.7	3.5	3.3	1.8	.64	1450	2.9	2.3	1.4
25	2.9	3.3	3.3	3.8	3.6	3.3	1.8	.63	284	2.8	2.1	1.3
26	3.0	3.3	3.3	3.7	3.6	3.3	1.7	.78	126	2.7	2.1	1.2
27	3.0	3.3	3.3	3.8	3.5	3.3	1.6	.95	161	3.1	24	1.1
28	3.0	3.2	3.4	3.8	3.5	3.2	1.5	1.0	99	3.9	140	1.1
29	3.0	3.2	3.3	4.0	---	3.1	1.5	.93	26	3.8	134	65
30	2.9	3.2	3.3	4.0	---	3.1	1.4	67	124	3.8	13	2.0
31	2.9	---	3.3	4.0	---	3.1	---	33	---	3.5	3.1	---
TOTAL	106.1	92.2	102.1	113.2	107.1	102.6	64.8	128.46	2940.96	303.6	423.9	837.14
MEAN	3.42	3.07	3.29	3.65	3.82	3.31	2.16	4.14	98.0	9.79	13.7	27.9
MAX	7.0	3.3	3.4	4.0	4.3	3.5	2.9	67	1450	72	140	368
MIN	2.8	2.8	3.1	3.3	3.4	3.1	1.4	.63	.72	2.7	1.9	.97
AC-FT	210	183	203	225	212	204	129	255	5830	602	841	1660

CAL YR 1985 TOTAL 1942.10 MEAN 5.32 MAX 560 MIN .00 AC-FT 3850

WTR YR 1986 TOTAL 5322.16 MEAN 14.6 MAX 1450 MIN .63 AC-FT 10560

08410000 RED BLUFF RESERVOIR NEAR ORLA, TX

LOCATION.--Lat 31°54'04", long 103°54'35", Reeves County, Hydrologic Unit 13070001, at right end of Red Bluff Dam on the Pecos River, 2.8 mi upstream from Salt Creek, and 5.2 mi north of Orla.

DRAINAGE AREA.--20,720 mi², approximately (contributing area).

PERIOD OF RECORD.--February 1937 to current year. Monthly contents only for some periods, published in WSP 1312.

GAGE.--Nonrecording gage. Datum of gage is 0.43 ft below National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rock-faced earthfill dam 9,200 ft long. The dam was completed and storage began in September 1936. The dam and reservoir are owned and operated by the Red Bluff Water Power Control District. The water is used for power development and for irrigation from Mentone to Grandfalls. The uncontrolled emergency spillway, 790 ft wide, is a cut through natural ground located to the right of right end of dam. The controlled service spillway is equipped with 12 tainter gates that are 25 by 15 ft high. Inflow is regulated by many reservoirs and diversions dams. The capacity curve is based on Geological Survey topographic map, survey of 1925. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam..	2,856.0	-
Crest of emergency spillway..	2,845.0	340,000
Top of gates (top of conservation pool)..............................	2,842.0	310,000
Crest of service spillway and bottom of tainter gates................	2,827.0	166,500
Lowest gated outlet (invert)...	2,764.0	3,000

COOPERATION.--Gage-height records and capacity curve were furnished by the Red Bluff Water Power and Control District.

EXTREMES (AT 0800) FOR PERIOD OF RECORD.--Maximum contents observed, 352,000 acre-ft Sept. 27, 28, 1941 (gage height, 2,846.2 ft), observed on nonrecording gage at service spillway (affected by variable drawdown due to flow through tainter gates); minimum observed, 11,080 acre-ft May 13, 1948 (gage height, 2,781.4 ft).

EXTREMES (AT 0800) FOR CURRENT YEAR.--Maximum contents observed, 212,000 acre-ft July 10-11 (gage height, 2,832.2 ft); minimum observed, 62,100 acre-ft June 20 (gage height, 2,807.6 ft).

Capacity table (gage height, in feet, and total contents, in acre-feet)

2,807.0	60,000	2,824.0	145,500
2,815.0	94,000	2,833.0	220,000

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62450	68300	71100	73900	76400	78200	68300	65900	63500	193800	203700	199200
2	62800	68300	71100	73900	76400	78200	68300	65900	63500	201000	202800	199200
3	62800	68700	71100	73900	76850	78200	68300	65900	63500	205500	202800	200100
4	62800	69100	71100	73900	76850	78200	68300	65900	63900	205500	202800	200100
5	63150	69100	71100	73900	76850	78200	68300	65900	63900	206400	201900	200100
6	63150	69100	71500	73900	76850	78200	68300	65900	63900	208200	201900	200100
7	63150	69500	71500	73900	76850	78200	68300	65900	63900	209100	201000	200100
8	63500	69500	71500	73900	76850	78650	67900	65900	63900	211000	201000	200100
9	63500	69500	71500	73900	76850	78650	67900	65900	63900	211000	201000	200100
10	63900	69500	71500	73900	77300	78650	67900	65900	63900	212000	201000	200100
11	63900	69900	71900	73900	77300	78650	67900	65900	63900	212000	200100	200100
12	63900	69900	71900	74300	77300	77750	67900	65900	63900	211000	200100	201000
13	64300	69900	71900	74300	77300	77300	67900	65900	63900	210000	200100	201000
14	64300	69900	72300	74300	77300	76400	67900	65500	63900	209100	200100	202800
15	64300	69900	72300	74300	77750	75500	67900	65500	63500	208200	200100	204600
16	64700	69900	72300	74300	77750	75100	67900	65100	63500	208200	200100	204600
17	65100	70300	72700	74700	77750	74300	67900	64700	63500	207300	199200	204600
18	65100	70300	72700	74700	77750	73500	67500	64300	63150	206400	199200	204600
19	65100	70300	72700	74700	77750	73100	67500	63900	62800	206400	199200	204600
20	65500	70300	72700	75100	77750	72300	67100	63500	62100	205500	199200	204600
21	65900	70300	72700	75100	77750	71500	66700	62800	62450	205500	198300	204600
22	66300	70300	73100	75100	77750	70700	66700	62800	62450	205500	198300	204600
23	66300	70300	73100	75500	77750	70300	66300	62800	63500	205500	198300	204600
24	66700	70700	73100	75500	78200	69500	66300	62800	66700	204600	197400	204600
25	66700	70700	73100	75500	78200	68700	66300	62800	96000	204600	197400	204600
26	67100	70700	73100	75500	78200	68700	66300	62800	136600	204600	197400	204600
27	67500	70700	73500	75950	78200	68300	66300	62800	154100	204600	197400	203700
28	67500	70700	73500	75950	78200	68300	65900	62800	169700	204600	198300	203700
29	67500	70700	73500	75950	---	68300	65900	62800	179600	204600	198300	202800
30	67900	70700	73500	76400	---	68300	65900	62800	186600	203700	199200	202800
31	68300	---	73500	76400	---	68300	---	63150	---	203700	199200	---
MAX	68300	70700	73500	76400	78200	78650	68300	65900	186600	212000	203700	204600
MIN	62450	68300	71100	73900	76400	68300	65900	62800	62100	193800	197400	199200
(†)	2809.2	2809.8	2810.5	2811.2	2811.6	2809.2	2808.6	2807.9	2829.4	2831.3	2830.8	2831.2
(ϕ)	+5850	+2400	+2800	+2900	+1800	-9900	-2400	-2750	+123400	+17100	-4500	+3600

CAL YR 1985 MAX 102000 MIN 56850 (ϕ) -17500
WTR YR 1986 MAX 212000 MIN 62100 (ϕ) +140400

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08412500 PECOS RIVER NEAR ORLA, TX

LOCATION.--Lat 31°52'21", long 103°49'52", Reeves County, Hydrologic Unit 13070001, on right bank at bridge on Farm Road 652, 5.5 mi downstream from Salt Creek (Screw Bean Arroyo), 5.9 mi northeast of Orla, and 8.5 mi downstream from Red Bluff Reservoir.

DRAINAGE AREA.--21,210 mi^2, approximately (contributing area).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1937 to current year.

REVISED RECORDS.--WSP 928: 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,730.86 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 16, 1969, at site 6.9 mi downstream at datum 12.81 ft lower.

REMARKS.--No estimated daily discharges. Records fair. Most of flow is releases from storage in Red Bluff Reservoir (station 08410000). Occasional runoff occurs from draws between dam and station. There are many diversions above Red Bluff Reservoir for irrigation.

AVERAGE DISCHARGE.--49 years (water years 1938-86), 155 ft^3/s (112,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft^3/s Sept. 29, 1941 (gage height, 20.74 ft), site and datum then in use; no flow at times in 1946 and 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 625 ft^3/s Sept. 3 at 1730 hours (gage height, 7.26 ft); minimum daily, 3.3 ft^3/s Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	5.2	9.8	14	6.1	6.5	16	17	17	144	65	92
2	16	5.7	9.5	50	6.1	6.5	15	17	18	331	102	75
3	13	6.0	9.9	50	6.4	6.5	15	17	18	338	98	400
4	12	5.9	10	50	7.2	6.5	15	16	18	339	93	356
5	9.5	5.2	10	49	7.6	6.5	15	16	18	346	91	134
6	7.9	5.0	10	48	8.4	6.8	15	16	18	348	89	53
7	7.1	5.0	10	49	6.8	6.9	18	17	18	339	79	23
8	5.3	4.7	10	47	6.4	7.3	50	17	18	277	70	22
9	6.6	7.2	11	13	6.1	7.9	55	17	18	317	65	21
10	5.3	6.5	12	7.0	5.9	7.4	55	17	18	324	65	21
11	6.7	6.3	11	6.9	6.3	8.4	16	17	18	332	65	21
12	5.5	6.1	11	7.2	6.5	284	15	17	18	327	65	20
13	4.3	6.1	11	7.4	6.8	324	15	17	17	327	65	20
14	3.5	6.0	10	6.9	7.6	323	15	17	17	326	65	20
15	3.3	6.3	9.4	6.9	7.5	326	15	64	18	330	70	20
16	3.6	6.5	9.5	6.7	7.7	323	15	115	18	335	138	21
17	19	6.5	9.2	6.5	7.1	320	110	115	18	337	127	20
18	34	6.7	8.9	6.2	7.0	320	116	115	30	299	121	21
19	11	6.5	8.9	6.1	6.5	317	115	169	281	80	113	21
20	7.9	6.5	8.9	6.5	6.4	317	115	315	322	60	95	20
21	5.8	6.9	8.9	6.5	5.9	320	115	155	394	60	70	21
22	5.0	7.0	8.7	6.0	6.1	318	115	44	127	60	65	21
23	4.3	6.9	8.1	5.7	5.8	318	115	18	244	60	65	33
24	3.9	7.6	7.9	5.7	5.7	317	18	18	143	60	65	35
25	4.0	7.9	7.4	5.7	5.8	315	17	17	234	55	65	100
26	4.0	7.9	6.9	5.7	6.3	152	17	17	251	55	65	100
27	3.6	8.3	6.9	5.9	6.5	102	17	17	115	55	65	100
28	3.8	8.4	6.5	6.2	6.5	80	17	17	74	55	117	100
29	3.7	8.5	6.5	6.3	---	63	17	17	65	55	208	100
30	3.6	10	6.9	6.1	---	18	17	17	58	55	122	100
31	3.9	---	7.0	6.1	---	17	---	17	---	55	90	---
TOTAL	263.1	199.3	281.7	510.2	185.0	4951.2	1281	1482	2641	6481	2738	2111
MEAN	8.49	6.64	9.09	16.5	6.61	160	42.7	47.8	88.0	209	88.3	70.4
MAX	36	10	12	50	8.4	326	116	315	394	348	208	400
MIN	3.3	4.7	6.5	5.7	5.7	6.5	15	16	17	55	65	20
AC-FT	522	395	559	1010	367	9820	2540	2940	5240	12860	5430	4190

CAL YR 1985 TOTAL 26333.6 MEAN 72.1 MAX 385 MIN 3.3 AC-FT 52230
WTR YR 1986 TOTAL 23124.5 MEAN 63.4 MAX 400 MIN 3.3 AC-FT 45870

08412500 PECOS RIVER NEAR ORLA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1937 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1937 to current year.
WATER TEMPERATURES: March 1953 to current year.

REMARKS.--October 1937 to September 1969, this station was published as 08410100 Pecos River below Red Bluff Dam, near Orla. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 29,400 microsiemens May 16, 1978; minimum daily, 1,600 microsiemens June 19, 1984.
WATER TEMPERATURES: Maximum daily, 31.0 C Aug. 13, 1978, and Aug. 13, 1982; minimum daily, 0.0°C on many days during winter months .

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 25,600 microsiemens June 2; minimum daily, 5,910 microsiemens Sept. 5.
WATER TEMPERATURES: Maximum daily, 30.0°C June 7; minimum daily, 2.0°C Dec. 14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 02...	1415	16	11600	17.5	2400	2200	580	220	2000
DEC 04...	1500	10	16300	8.0	2800	2700	690	260	2900
APR 01...	1335	15	14800	21.0	2600	2500	640	240	2600
JUN 03...	1400	18	25500	25.0	3800	3700	900	370	5300
AUG 05...	1500	93	11000	26.0	2200	2100	550	210	1800

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 02...	19	40	107	1900	3200	0.8	11	8000
DEC 04...	25	38	108	2600	4700	1.1	6.4	11000
APR 01...	23	41	118	2400	4100	1.1	4.1	10000
JUN 03...	39	45	94	3400	7900	1.5	1.3	18000
AUG 05...	17	44	100	1900	2900	0.8	6.6	7500

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	263.1	14400	9780	6950	4100	2890	2200	1590	*
NOV. 1985	199.3	16400	11200	6030	4700	2550	2500	1330	*
DEC. 1985	281.7	16400	11200	8520	4700	3590	2500	1880	*
JAN. 1986	510.2	12800	8650	11900	3500	4890	2000	2810	*
FEB. 1986	185.0	16300	11100	5540	4700	2330	2500	1230	*
MAR. 1986	4951.2	10600	7080	94700	2800	37900	1700	23400	*
APR. 1986	1281	11900	7990	27600	3200	11200	1900	6650	*
MAY 1986	1482	11700	7870	31500	3200	12700	1900	7610	*
JUNE 1986	2641	11400	7690	54900	3100	22300	1800	13100	*
JULY 1986	6481	11700	7900	138000	3200	55900	1900	33400	*
AUG. 1986	2738	11200	7510	55500	3000	22400	1800	13500	*
SEPT 1986	2111	10200	6810	38800	2700	15500	1700	9600	*
TOTAL	23124.5	**	**	480000	**	194000	**	116000	**
WTD.AVG.	63	11400	7690	**	3100	**	1900	**	**

08412500 PECOS RIVER NEAR ORLA, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11100	15300	16300	15900	15700	15900	14600	13400	11100	12500	10200	13100
2	11400	15200	16400	11700	15800	15800	14800	13600	25600	11800	10900	12200
3	13700	15400	16300	11600	15700	15900	14900	13500	24100	11800	11000	8500
4	15100	16800	16200	11500	16300	15900	16000	13400	24000	11700	10900	8850
5	15700	17600	16300	11200	16400	16000	14800	13300	21500	11700	10900	5910
6	16100	17800	16400	11000	16400	16100	14400	13400	18800	11800	11000	8870
7	16300	17600	16600	11100	16600	16100	14300	13500	17300	11700	11000	9450
8	16200	17700	16800	11500	16500	16000	11900	13400	16700	11800	11100	10600
9	15700	17300	16700	11700	16400	16100	11700	13100	15600	11700	11200	11400
10	15100	16900	16800	14500	16000	16300	11600	12900	16000	11600	10900	11400
11	15700	16000	15000	16200	16100	16200	11700	12700	19500	13000	11000	11800
12	16600	15800	16200	16600	16500	10600	13700	12600	19300	11700	11100	12500
13	17800	16000	15500	16700	16600	10400	14300	12500	17600	11600	11100	12600
14	18400	16200	16400	16800	17000	10300	14500	12400	16000	11500	11000	12500
15	19200	16400	16400	16700	17100	10400	14400	11700	15400	11400	11100	12900
16	17200	16600	16600	16500	17000	10300	13800	11300	15100	11400	10800	13500
17	15700	16500	16500	16400	16900	10400	11100	11400	15000	11500	11900	13800
18	12900	16500	16500	16300	16700	10500	11000	11500	14500	11400	11200	13800
19	15700	16400	16600	16300	16500	10400	11000	11400	12100	12100	11000	13700
20	16100	16600	16600	16200	16400	10400	11100	11000	11900	12000	10900	13800
21	15400	16400	16700	16100	16000	10400	11200	11400	11000	12100	11000	13600
22	15700	16200	16600	16100	15700	10400	11100	11500	13300	11900	11000	13600
23	15300	16400	16900	16000	15600	10500	11200	11600	8850	11900	10900	13500
24	14800	16300	16800	16000	15400	10500	12100	12000	7650	11800	10600	13200
25	14900	16300	16600	16000	15500	10400	13000	12300	10100	11800	11100	12200
26	15100	16400	16600	16000	15600	10800	13200	12400	8460	11700	10800	10700
27	15000	16200	16500	16000	15800	11000	13300	12500	8930	11800	15500	10400
28	14700	16400	16400	15900	15900	11300	13400	12600	10200	11900	19700	10300
29	14800	16300	16400	15700	---	11200	13600	12700	11500	11800	7060	10200
30	15000	16200	16300	15800	---	11500	13500	12800	12100	11700	10200	10400
31	15100	---	16200	15600	---	14200	---	12100	---	11700	11900	---
MEAN	15400	16500	16400	14900	16200	12700	13000	12400	15000	11800	11300	11600

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	16.0	10.0	9.0	11.0	12.0	21.0	22.0	22.0	25.5	25.0	24.0
2	17.0	15.0	7.0	8.0	12.0	13.0	19.0	22.0	23.0	24.0	24.0	25.0
3	17.0	14.0	5.5	9.0	13.0	15.0	17.0	25.0	23.0	25.0	24.0	23.0
4	17.0	15.0	5.5	7.0	14.0	14.0	16.0	22.0	22.0	26.0	26.0	22.0
5	16.0	14.0	5.5	6.0	11.0	15.0	16.0	---	26.0	24.5	24.0	22.5
6	17.0	15.0	7.0	7.0	10.0	16.5	25.0	21.5	27.0	24.0	24.0	25.0
7	19.0	14.0	8.0	6.0	7.0	16.0	21.0	22.0	30.0	25.0	24.0	23.0
8	19.0	15.0	8.0	3.0	---	14.0	20.0	21.0	26.0	24.0	---	22.0
9	20.0	14.5	7.0	3.5	6.0	15.0	19.0	20.0	26.0	25.0	25.0	26.0
10	19.0	15.0	7.0	3.0	3.0	16.0	18.0	19.0	26.0	24.0	24.0	25.0
11	23.0	14.0	5.5	5.5	4.0	15.0	20.0	20.0	26.0	24.0	24.0	24.0
12	27.0	14.0	4.0	9.0	3.0	14.0	21.0	22.0	25.0	25.0	25.0	22.0
13	18.0	14.0	3.0	5.0	3.0	13.0	21.0	22.0	26.0	24.0	26.0	23.0
14	19.0	14.0	2.0	5.0	12.0	13.5	19.0	23.0	27.0	24.0	25.0	23.0
15	20.0	12.0	3.0	10.0	12.0	13.0	19.0	22.0	27.0	25.0	25.0	24.0
16	17.0	11.0	5.5	8.5	12.0	14.0	24.0	20.0	---	24.0	24.0	23.0
17	17.0	11.0	3.0	8.0	12.0	13.0	23.0	17.5	26.0	24.0	24.0	24.0
18	17.0	12.0	4.0	8.0	14.0	12.5	17.0	17.0	29.0	24.0	27.0	25.0
19	18.0	12.0	4.0	9.0	14.0	12.5	17.0	18.0	23.0	25.0	24.0	25.0
20	19.0	10.0	5.0	9.0	14.0	12.0	17.0	19.0	24.0	25.0	23.0	25.0
21	19.0	9.0	5.0	10.0	15.0	13.0	21.0	20.0	23.0	26.5	24.5	24.0
22	20.0	8.5	5.0	9.5	10.0	13.0	17.0	21.0	25.0	25.0	25.0	25.0
23	19.0	10.0	5.5	9.0	11.0	14.0	17.0	20.0	22.0	25.0	23.0	24.0
24	19.0	11.0	7.0	9.0	15.0	14.0	21.0	22.0	22.0	25.0	22.5	23.0
25	18.0	12.0	6.0	8.0	14.0	13.0	21.0	22.0	24.0	28.0	23.0	21.0
26	19.0	14.0	5.0	7.0	15.0	13.0	21.0	21.0	23.0	28.0	24.0	21.0
27	18.0	12.0	5.0	7.0	15.0	16.0	18.0	22.0	25.0	26.0	25.0	20.0
28	19.0	12.0	4.5	8.0	12.5	15.0	18.0	21.0	26.0	26.0	23.0	22.0
29	19.0	12.0	5.0	8.5	---	15.0	21.0	24.0	26.0	25.0	22.0	22.0
30	17.0	11.0	7.0	7.0	---	17.0	22.0	22.0	26.5	25.0	23.0	21.0
31	15.0	---	8.0	9.0	---	19.0	---	20.0	---	25.0	24.0	---
MEAN	18.5	13.0	5.5	7.5	11.0	14.0	19.5	21.0	25.0	25.0	24.0	23.5

08414500 REEVES COUNTY WATER IMPROVEMENT DISTRICT NO. 2 CANAL NEAR MENTONE, TX

LOCATION.--Lat 31°37'57", long 103°34'30", Loving County, Hydrologic Unit 13070001, on right bank 173 ft downstream from headgate, 5.3 mi south of Mentone, and 15 mi northwest of Pecos.

PERIOD OF RECORD.--February 1922 to July 1925, August 1939 to May 1941, March 1942 to September 1957, and March 1964 to September 1986 (discontinued as a continuous-record station; converted to seasonal). Records from August 1939 to October 1940, not equivalent because diversion was not included. Published as "Farmers Independent Canal near Porterville" 1922-25.

GAGE.--Water-stage recorder. Concrete weir since Mar. 1, 1964. Elevation of gage is 2,640 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 22, 1925, at site 250 ft downstream at different datum. Mar. 10, 1939, to Oct. 4, 1940, at site 2.5 mi downstream at different datum. Oct. 5, 1940, to Feb. 19, 1943, at site 123 ft upstream at datum 1.10 ft higher. Feb. 20, 1943, to Mar. 1, 1954, at site 123 ft upstream at present datum.

REMARKS.--No estimated daily discharge. Records good. At times, runoff is deleted from daily discharge record. Water is diverted from right bank of Pecos River and is used for irrigation between Mentone and Pecos. Discharges from April to September only, after September 1986.

AVERAGE DISCHARGE.--40 years (water years 1923-24, 1940, 1943-57, 1965-86), 7.46 ft³/s (5,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 160 ft³/s June 14, 1922; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.00	.00	.00	.00	.00	.00	.00	15	.03	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	31	2.1	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	14	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.02
14	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.02	.00	.00	.01	.00	.00	.00
21	.00	.00	.00	.00	.00	.02	.00	.00	.06	.00	.00	.00
22	.00	.00	.00	.00	.00	.01	.00	.00	.02	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.01	.00	.00	.06	.00	.22	.00	.00	60.20	2.13	.00	.02
MEAN	.00	.00	.00	.00	.00	.01	.00	.00	2.01	.07	.00	.00
MAX	.01	.00	.00	.02	.00	.06	.00	.00	31	2.1	.00	.02
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.02	.00	.00	.1	.00	.4	.00	.00	119	4.2	.00	.04

CAL YR 1985 TOTAL 1316.52 MEAN 3.61 MAX 46 MIN .00 AC-FT 2610
WTR YR 1986 TOTAL 62.64 MEAN .17 MAX 31 MIN .00 AC-FT 124

08415000 WARD COUNTY WATER IMPROVEMENT DISTRICT NO. 3 CANAL NEAR BARSTOW, TX

LOCATION.--Lat 31°34'28", long 103°30'04", Ward County, Hydrologic Unit 13070001, on left bank 96 ft upstream from concrete culvert that crosses canal, 2 mi downstream from headgate, and 10.5 mi northwest of Barstow.

PERIOD OF RECORD.--August 1939 to May 1941, August to September 1941, December 1941 to September 1957, and March 1964 to September 1986 (discontinued as a continuous-record station; converted to seasonal).

GAGE.--Water-stage recorder. Elevation of gage is 2,600 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 14, 1940, at site 1.75 mi upstream at datum 2.98 ft higher. Dec. 14, 1940, to May 26, 1941, at site 1.4 mi upstream at datum 1.72 ft higher.

REMARKS.--No estimated daily discharges. Records good. At times, local runoff is deleted from daily discharge record. Water is diverted from the left bank of Pecos River, and is used for irrigation in the vicinity of Barstow. Discharges for April to September only, after September 1986.

AVERAGE DISCHARGE.--38 years (water years 1940, 1943-57, 1965-86), 8.10 ft^3/s (5,870 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 189 ft^3/s Sept. 28, 1978; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

	TOTAL		MEAN		MAX		MIN		AC-FT	
CAL YR 1985	TOTAL	.00	MEAN	.00	MAX	.00	MIN	.00	AC-FT	.00
WTR YR 1986	TOTAL	.00	MEAN	.00	MAX	.00	MIN	.00	AC-FT	.00

08418000 WARD COUNTY IRRIGATION DISTRICT NO. 1 CANAL NEAR BARSTOW, TX

LOCATION.--Lat 31°32'26", long 103°29'42", Ward County, Hydrologic Unit 13070001, on left bank 0.6 mi downstream from headgate and 7.9 mi northwest of Barstow.

PERIOD OF RECORD.--February 1922 to September 1925 (published as "Barstow Canal near Barstow"), August 1939 to May 1941, October 1941 to September 1957, and March 1964 to September 1986 (discontinued as a continious-record station; converted to seasonal)

GAGE.--Water-stage recorder. Concrete weir since Nov. 20, 1968. Elevation of gage is 2,600 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 15, 1939, at site about 3,000 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. At times, local runoff is deleted from daily discharge record. Water is diverted from left bank of Pecos River and is used for irrigation in the vicintiy of Barstow. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--42 years (water years 1923-25, 1940, 1942-57, 1965-86), 25.1 ft³/s (18,180 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 385 ft³/s Aug. 30, 1923; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	.00	.00	.00	.00	.54	5.3	.54	.54	.85	.10	.54
2	14	.00	.00	.00	.00	.54	.54	.54	.54	.89	.10	.54
3	.00	.00	.00	.00	.00	.54	.54	.54	38	.85	.10	.54
4	.00	.00	.00	.00	.00	.54	.54	.54	.54	.84	11	.54
5	.00	.00	.00	.00	.00	.54	.54	.54	.54	.58	36	20
6	.00	.00	.00	.00	.00	.54	.54	.54	.54	.54	47	74
7	.00	.00	.00	.00	.00	.54	.54	.54	.54	.54	48	84
8	.00	.00	.00	.00	.00	.54	.54	.54	.54	.54	42	84
9	.00	.00	.00	.00	.00	.54	.54	.54	.54	.54	11	73
10	.00	.00	.00	.00	.00	.54	.54	.54	.54	.54	.10	66
11	.00	.00	.00	.00	.00	.54	.54	.54	.54	17	.10	45
12	.00	.00	.00	.00	.00	.54	.54	.54	.54	38	.10	32
13	.00	.00	.00	.00	.00	.54	.54	.54	.54	42	.10	27
14	.00	.00	.00	.00	.00	.54	.54	.54	.54	42	.10	33
15	.00	.00	.00	.00	.00	.54	.54	.54	.54	42	.10	19
16	.00	.00	.00	.00	.00	.54	.54	.54	.54	42	.15	14
17	.00	.00	.00	.00	.00	.54	.54	.54	.54	42	.20	37
18	.00	.00	.00	.00	.00	.54	.54	.54	.54	43	32	32
19	.00	.00	.00	.00	.00	.54	.54	8.2	.54	42	57	25
20	.00	.00	.00	.00	.00	.54	11	30	.57	42	62	18
21	.00	.00	.00	.00	.00	.54	29	36	5.3	41	57	14
22	.00	.00	.00	.00	.00	.54	31	38	44	35	57	12
23	.00	.00	.00	.00	.00	.54	32	38	47	.28	44	12
24	.00	.00	.00	.00	.00	.54	20	12	40	.20	.30	11
25	.00	.00	.00	.00	.00	.54	11	.54	27	.20	.30	17
26	.00	.00	.00	.00	.00	.54	8.3	.54	.84	.20	.30	26
27	.00	.00	.00	.00	.37	.54	.54	.54	27	.20	.30	32
28	.00	.00	.00	.00	.54	25	.54	.54	88	.20	.30	39
29	.00	.00	.00	.00	---	30	.54	.54	112	.20	.30	44
30	.00	.00	.00	.00	---	27	.54	.54	49	.20	.30	37
31	.00	---	.00	.00	---	28	---	.54	---	.16	.53	---
TOTAL	50.00	.00	.00	.00	.91	124.58	159.48	175.70	488.43	476.55	507.88	929.16
MEAN	1.61	.00	.00	.00	.03	4.02	5.32	5.67	16.3	15.4	16.4	31.0
MAX	36	.00	.00	.00	.54	30	32	38	112	43	62	84
MIN	.00	.00	.00	.00	.00	.54	.54	.54	.54	.16	.10	.54
AC-FT	99	.00	.00	.00	1.8	247	316	349	969	945	1010	1840

CAL YR 1985 TOTAL 2807.71 MEAN 7.69 MAX 58 MIN .00 AC-FT 5570
WTR YR 1986 TOTAL 2912.69 MEAN 7.98 MAX 112 MIN .00 AC-FT 5780

08431700 LIMPIA CREEK ABOVE FORT DAVIS, TX
(Hydrologic bench-mark station)

LOCATION.--Lat 30°36'48", long 104°00'04", Jeff Davis County, Hydrologic Unit 13070005, on left downstream side of bridge on State Highway 118, about 1,400 ft upstream from Jones Creek, and 6.8 mi west of Fort Davis.

DRAINAGE AREA.--52.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1965 to September 1986 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 5,175.00 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 1, 1979, at site 600 ft upstream at datum 3.71 ft higher.

REMARKS.--No estimated daily discharges. Records good. No diversion above station. Recording rain gage at station.

AVERAGE DISCHARGE.--21 years, 3.12 ft³/s (0.81 in/yr), 2,260 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,610 ft³/s June 19, 1984 (gage height, 9.00 ft, from floodmark), present datum, from rating curve extended above 720 ft³/s on basis of slope-area measurement of 8,610 ft; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1925, about 9.00 ft in 1939, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 23	2300	*926	*5.29				

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	11	.19	62
2	.00	.00	.00	.00	.00	.00	.00	.00	68	5.5	.13	64
3	.00	.00	.00	.00	.00	.00	.00	.00	13	59	.12	313
4	.00	.00	.00	.00	.00	.00	.00	.00	2.4	18	.10	129
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.9	.02	87
6	.00	.00	.00	.00	.00	.00	.00	.00	.77	40	.00	42
7	.00	.00	.00	.00	.00	.00	.00	.00	1.2	26	.00	24
8	.00	.00	.00	.00	.00	.00	.00	.00	.57	6.9	.00	18
9	.00	.00	.00	.00	.00	.00	.00	.00	.40	2.8	.00	20
10	.00	.00	.00	.00	.00	.00	.00	.00	.45	2.1	54	13
11	.00	.00	.00	.00	.00	.00	.00	.00	.57	1.4	3.2	8.0
12	.00	.00	.00	.00	.00	.00	.00	.00	.64	25	1.0	5.5
13	.00	.00	.00	.00	.00	.00	.00	.00	.71	8.0	1.2	4.3
14	.00	.00	.00	.00	.00	.00	.00	.00	.45	2.1	74	3.9
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	53	3.2
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.87	63	22
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.64	17	43
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45	7.4	26
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.51	5.5	14
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45	2.8	11
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.51	1.4	9.2
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.51	1.4	8.0
23	.00	.00	.00	.00	.00	.00	.00	.00	52	.40	1.0	9.9
24	.00	.00	.00	.00	.00	.00	.00	.00	176	.40	1.0	6.9
25	.00	.00	.00	.00	.00	.00	.00	.00	271	.35	.95	5.1
26	.00	.00	.00	.00	.00	.00	.00	.00	102	.31	.78	4.7
27	.00	.00	.00	.00	.00	.00	.00	.00	25	.31	.87	3.5
28	.00	.00	.00	.00	.00	.00	.00	.00	8.6	.28	.78	3.5
29	.00	.00	.00	.00	---	.00	.00	.00	83	.26	.95	3.5
30	.00	.00	.00	.00	---	.00	.00	.00	31	.21	.87	3.2
31	.00	---	.00	.00	---	.00	---	.00	---	.21	.87	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	837.76	222.57	293.53	970.4
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	27.9	7.18	9.47	32.3
MAX	.00	.00	.00	.00	.00	.00	.00	.00	271	59	74	313
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.21	.00	3.2
CFSM	.000	.000	.000	.000	.000	.000	.000	.000	.53	.14	.18	.62
IN.	.00	.00	.00	.00	.00	.00	.00	.00	.59	.16	.21	.69
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	1660	441	582	1920
(††)	1.08	.07	.03	.20	0	0	0	2.14	6.27	1.00	3.51	3.55

CAL YR 1985 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 CFSM .000 IN .00 AC-FT .00 (††) 14.02
WTR YR 1986 TOTAL 2324.26 MEAN 6.37 MAX 313 MIN .00 CFSM .12 IN 1.65 AC-FT 4610 (††) 17.85

(††) Rainfall, in inches.

08431700 LIMPIA CREEK ABOVE FORT DAVIS, TX--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
JUN											
04...	0900	0.44	110	7.10	16.0	40	9.4	115	K840	4300	40
25...	1700	350	94	7.90	21.5	60	9.6	131	--	--	37
25...	2000	454	88	6.90	20.0	150	9.4	125	--	--	31

DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
JUN											
04...	9	13	1.9	5.5	0.4	3.2	31	15	2.6	0.4	29
25...	3	12	1.8	5.0	0.4	3.0	34	13	2.1	0.3	25
25...	1	10	1.5	4.4	0.4	3.2	30	12	2.3	0.3	24

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
JUN											
04...	81	91	1.49	0.01	1.50	0.07	0.04	0.43	0.5	0.23	0.17
25...	93	85	--	<0.01	0.14	0.07	0.04	1.0	1.1	0.31	0.22
25...	98	78	--	<0.01	0.12	0.04	0.06	0.76	0.8	0.32	0.21

DATE	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)
JUN											
04...	0.14	0.43	26	0.03	92	270	<1	27	<0.5	<1	<1
25...	0.18	0.55	1060	1000	73	--	--	--	--	--	--
25...	0.17	0.52	597	732	57	250	<1	23	1	<1	<1

DATE	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)
JUN											
04...	<3	6	310	5	<4	5	<0.1	<10	4	<1	<1
25...	--	--	--	--	--	--	--	--	--	--	--
25...	<3	4	170	<5	6	7	<0.1	<10	1	<1	<1

DATE	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. -TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
JUN											
04...	67	<6	13	<0.8	6.6	2.8	4.8	2.6	4.3	0.04	0.1
25...	--	--	--	--	--	--	--	--	--	--	--
25...	56	<6	15	--	--	--	--	--	--	--	--

08436500 PECOS COUNTY WATER IMPROVEMENT DISTRICT No. 2 (UPPER DIVERSION) CANAL NEAR GRANDFALLS, TX

LOCATION.--Lat 31°18'43", long 102°55'10", Ward County, Hydrologic Unit 13070001, on left bank about 2.5 mi upstream from bridge on State Highway 18, 4.6 mi southwest of Grandfalls, and 12.5 mi downstream from headgate of canal.

PERIOD OF RECORD.--March 1922 to July 1925 (published as "Imperial Highline Canal near Grandfalls"), August 1939 to September 1957, and March 1964 to September 1986 (discontinued as a continuous-record station; converted to seasonal).

GAGE.--Water-stage recorder. Concrete weir since Dec. 8, 1947. Elevation of gage is 2,455 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 21, 1939, water-stage recorder at site 8.5 mi upstream at different datum. Aug. 21, to Oct. 3, 1939, and May 25 to Aug. 4, 1941, staff gage, Oct. 4, 1939, to May 21, 1941, and Aug. 5, 1941, to Sept. 30, 1957, water-stage recorder at site 2.5 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. At times, local runoff is deleted from daily discharge record. Water is diverted from right bank of Pecos River and is used for irrigation and to supply water for Imperial Reservoir. Water is released from Imperial Reservoir into Pecos County Water Improvement District No. 2 canal and into Pecos County Water Improvement District No. 3 canal for irrigation. Discharges from April to September only, after September 1986.

AVERAGE DISCHARGE.--41 years (water years 1924, 1940-57, 1965-86), 28.1 ft³/s (20,360 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 368 ft³/s Sept. 18, 1923; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	43	.00	.00	.00	.00	14
2	.00	.00	.00	.00	.00	.00	7.7	.00	.00	.00	.00	17
3	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	36
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	85
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	80
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	63
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	69
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	94
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	99
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	16
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	84	.00	.72
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	173	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	171	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	164	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	159	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	130	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	122	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	126	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	152	.00	.00
20	.00	.00	.00	.00	.00	96	.00	.00	.00	151	.00	.00
21	.00	.00	.00	.00	.00	96	.00	.00	.00	150	.00	.00
22	.00	.00	.00	.00	.00	86	.00	.00	.00	152	.00	.00
23	.00	.00	.00	.00	.00	92	.00	.00	.00	144	.00	.00
24	.00	.00	.00	.00	.00	106	.00	.00	.00	103	.00	.00
25	.00	.00	.00	.00	.00	105	.00	.00	.00	58	.00	.00
26	.00	.00	.00	.00	.00	118	.00	.00	.00	9.1	.00	.00
27	.00	.00	.00	.00	.00	128	.00	.00	.00	.16	.00	.00
28	.00	.00	.00	.00	.00	136	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	138	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	138	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	96	---	.00	---	.00	14	---
TOTAL	.00	.00	.00	.00	.00	1335.00	50.80	.00	.00	2048.30	14.00	573.72
MEAN	.00	.00	.00	.00	.00	43.1	1.69	.00	.00	66.1	.45	19.1
MAX	.00	.00	.00	.00	.00	138	43	.00	.00	173	14	99
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	2650	101	.00	.00	4060	28	1140

CAL YR 1985 TOTAL 5368.04 MEAN 14.7 MAX 159 MIN .00 AC-FT 10650
WTR YR 1986 TOTAL 4021.82 MEAN 11.0 MAX 173 MIN .00 AC-FT 7980

08437500 PECOS COUNTY WATER IMPROVEMENT DISTRICT No. 2 CANAL NEAR IMPERIAL, TX

LOCATION.--Lat 31°16'38", long 102°43'54", Pecos County, Hydrologic Unit 13070001, on left bank about 2.4 mi west of Imperial and 7.7 mi downstream from Imperial Reservoir.

PERIOD OF RECORD.--April 1940 to May 1941, March 1942 to September 1957, and March 1964 to September 1986 (discontinued as a continuous-record station; converted to seasonal). Records since March 1942 are equivalent to earlier records if diversions to Pecos County Water Improvement District No. 3 canal near Imperial (station 08437600) are added to flow past this station.

GAGE.--Water-stage recorder. Wooden weir June 1, 1943, to Feb. 29, 1964, and concrete weir since Mar. 1, 1964. Elevation of gage is about 2,400 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 11, 1940, at site 1.5 mi upstream at different datum. July 12, 1940, to Mar. 23, 1942, at site 2.5 mi upstream at datum 3.36 ft higher. Mar. 24, 1942, to May 31, 1943, at site 0.5 mi upstream at datum 0.70 ft higher.

REMARKS.--No estimated daily discharges. Records good. At times, local runoff is deleted from daily discharge record. Water is diverted from Imperial Reservoir (on right bank of Pecos River) for irrigation in the vicinity of Imperial, and at times includes water diverted from the Pecos River through Cut Around Canal. The total flow at this station does not include water diverted from canal 75 ft upstream, or water diverted into Pecos County Improvement District No. 3 canal (see station 08437600), 0.6 mi upstream. Discharges from April to September only, after September 1986.

AVERAGE DISCHARGE.--37 years (water years 1943-57, 1965-86), 10.7 ft^3/s (7,750 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 144 ft^3/s July 27, 28, 31, Aug. 1, 1945; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	35	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	33	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	27	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	1.3
5	15	.00	.00	.00	.00	.00	22	.00	.00	.00	.00	.00
6	.14	.00	.00	.00	.00	.00	22	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	21	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	19	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	17	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	12	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	13	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	12	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	1.9	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	5.1	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	4.1	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.62	.00	.00	9.2	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	19	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	11	9.5	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	11	16	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	13	16	.00
22	.00	.00	.00	.00	.00	.00	.00	.40	.00	14	16	.00
23	.00	.00	.00	.00	.00	.00	.00	31	.00	13	12	.00
24	.00	.00	.00	.00	.00	.00	4.3	29	.00	22	12	.00
25	.00	.00	.00	.00	.00	.00	20	25	.00	27	9.5	.00
26	.00	.00	.00	.00	.00	.00	20	36	.00	27	.02	.00
27	.00	.00	.00	.00	.00	.00	14	36	.00	27	.00	.00
28	.00	.00	.00	.00	.00	.00	.16	35	.00	16	.00	.00
29	.00	.00	.00	.00	---	.00	.00	33	.00	8.8	.00	.00
30	.00	.00	.00	.00	---	.00	.00	2.7	.00	.01	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	140.14	.00	.00	.00	.00	.00	228.18	228.10	.00	218.01	91.02	1.30
MEAN	4.52	.00	.00	.00	.00	.00	7.61	7.36	.00	7.03	2.94	.04
MAX	35	.00	.00	.00	.00	.00	22	36	.00	27	16	1.3
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	278	.00	.00	.00	.00	.00	453	452	.00	432	181	2.6

CAL YR 1985 TOTAL 1037.33 MEAN 2.84 MAX 35 MIN .00 AC-FT 2060
WTR YR 1986 TOTAL 906.75 MEAN 2.48 MAX 36 MIN .00 AC-FT 1800

08437600 PECOS COUNTY WATER IMPROVEMENT DISTRICT NO. 3 CANAL NEAR IMPERIAL, TX

LOCATION.--Lat 31°16'51", long 102°44'26", Pecos County, Hydrologic Unit 13070001, on left bank about 220 ft upstream from bridge on Farm Road 11, 0.3 mi downstream from headgate (Pecos No. 2 canal), and 2.9 mi west of Imperial.

PERIOD OF RECORD.--March 1940 to September 1941, March 1942 to September 1957, and March 1964 to September 1986 (discontinued as a continuous record station; converted to seasonal).

GAGE.--Water-stage recorder. Concrete weir since Mar. 7, 1944. Elevation of gage is 2,390 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 10, 1941, at site 350 ft downstream at datum 6.79 ft lower. Jan. 10, 1941, to Mar. 29, 1942, at site 200 ft downstream at datum 3.65 ft lower.

REMARKS.--No estimated daily discharges. Records are good. At times local runoff is deleted from daily discharge record. Water is diverted from Imperial Reservoir (on right bank of Pecos River), 7.6 mi upstream, for irrigation in the vicinity of Imperial, and at times includes water diverted from the Pecos River by Cut Around Canal. Discharges from April to September only, after September 1986.

AVERAGE DISCHARGE.--38 years (water years 1941, 1943-57, 1965-86), 7.97 ft³/s (5,770 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 175 ft³/s Aug. 11, 1940; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	17
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.5
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.85
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	5.8	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	17	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.49	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.74	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.7	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.1	21	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	17	20	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	17	1.1	.00
23	.00	.00	.00	.00	.00	.00	.00	16	.00	17	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	8.2	.00	7.5	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.63	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	2.2	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	1.0	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	24.03	24.20	.00	63.60	54.63	21.35
MEAN	.00	.00	.00	.00	.00	.00	.80	.78	.00	2.05	1.76	.71
MAX	.00	.00	.00	.00	.00	.00	17	16	.00	17	21	17
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	48	48	.00	126	108	42

CAL YR 1985 TOTAL 358.31 MEAN .98 MAX 36 MIN .00 AC-FT 711
WTR YR 1986 TOTAL 187.81 MEAN .51 MAX 21 MIN .00 AC-FT 373

08437700 WARD COUNTY WATER IMPROVEMENT DISTRICT NO. 2 CANAL NEAR GRANDFALLS, TX

LOCATION.--Lat 31°22'13", long 103°00'24", Ward County, Hydrologic Unit 13070001, on left bank 1,550 ft upstream from Farm Road 1776, 2.3 mi downstream from headgate, and 9.5 mi west of Grandfalls.

PERIOD OF RECORD.--August 1939 to September 1941, November 1941 to September 1957, and March 1964 to September 1986 (discontinued as a continuous-record station; converted to continuous-record seasonal).

GAGE.--Water-stage recorder. Concrete weir since Feb. 17, 1947. Elevation of gage is 2,460 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 10, 1941, at site 1.75 mi downstream at different datum. Jan. 11, 1941, to Feb. 16, 1947, at site 50 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 27 to Dec. 2. Records fair. At times local runoff is deleted from discharge record. Water is diverted from the left bank of the Pecos River for irrigation in the vicinity of Grandfalls. Several observations of water temperature were made during the year. Discharges from April to September only, after September 1986.

AVERAGE DISCHARGE.--38 years (water years 1940, 1943-57, 1965-86), 17.1 ft³/s (12,390 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 198 ft³/s Apr. 9, 1947; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.20	.50	11	.00	.00	.00	.00	.04	12	.67	2.6
2	.14	.26	.50	12	.00	.00	.00	.00	.00	13	.65	.97
3	.14	.14	.40	11	.00	.00	.00	.00	.00	12	.65	1.8
4	.14	.14	.30	8.7	.00	.00	.00	.00	.00	12	.69	18
5	.14	.20	.29	.24	.00	.00	.00	.00	.00	19	.69	37
6	.14	.20	.29	.13	.00	.00	.07	.00	.00	57	.69	47
7	.14	.20	.28	.09	.00	.00	.11	.00	.00	74	.69	13
8	.14	.20	.27	.06	.00	.00	.11	.00	.00	66	.69	17
9	.20	.20	.25	.04	.00	.00	.12	.00	.00	11	.69	40
10	.20	.20	.27	.03	.00	.00	.14	.00	.00	9.9	4.9	96
11	.20	.20	.31	.16	.00	.00	.14	.00	.00	7.6	8.2	78
12	.20	.20	.29	.15	.00	.00	.10	.00	.00	6.5	7.5	61
13	.14	.20	.27	.13	.00	.00	.13	.00	.00	6.4	7.9	44
14	.20	.20	.26	.09	.00	.00	.09	.00	2.3	5.8	8.7	63
15	.14	.26	.31	.05	.00	.00	.13	.00	1.5	5.4	9.3	62
16	.14	.20	.32	.04	.00	.00	.14	.00	1.2	27	9.4	49
17	.33	.20	.29	.01	.00	.00	.14	.00	1.3	47	9.3	45
18	.33	.20	.26	.01	.00	.00	.14	.00	1.8	36	12	64
19	.20	.20	.26	.12	.00	.00	.13	.00	1.8	1.2	42	79
20	.20	.26	.26	.48	.00	.00	.10	.00	1.7	1.0	39	59
21	.14	.26	.26	.50	.00	.00	.12	.00	1.7	.92	32	41
22	.14	.33	.27	.58	.00	.00	.07	.00	3.0	.89	15	32
23	.14	.33	.28	.50	.00	.00	.07	.00	6.3	.75	4.6	29
24	.14	.33	.28	.50	.00	.00	.03	.00	5.8	.74	7.7	28
25	.14	.33	.26	.32	.00	.00	.01	.00	7.7	.65	12	25
26	.14	.40	.26	.08	.00	.00	.01	.00	9.3	.73	29	24
27	.14	.65	.24	.08	.00	.00	.02	.00	10	.68	43	23
28	.14	.65	3.6	.06	.00	.00	.01	.00	12	.73	33	33
29	.20	.65	17	.02	---	.00	.02	.00	12	.75	32	51
30	.14	.50	10	.03	---	.00	.00	.00	12	.74	34	42
31	.14	---	11	.00	---	.00	---	.00	---	.73	16	---
TOTAL	5.26	8.49	49.63	47.20	.00	.00	2.15	.00	91.44	438.11	422.61	1205.37
MEAN	.17	.28	1.60	1.52	.00	.00	.07	.00	3.05	14.1	13.6	40.2
MAX	.33	.65	17	12	.00	.00	.14	.00	12	74	43	96
MIN	.14	.14	.24	.00	.00	.00	.00	.00	.00	.65	.65	.97
AC-FT	10	17	98	94	.00	.00	4.3	.00	181	869	838	2390

CAL YR 1985 TOTAL 643.04 MEAN 1.76 MAX 70 MIN .00 AC-FT 1280
WTR YR 1986 TOTAL 2270.26 MEAN 6.22 MAX 96 MIN .00 AC-FT 4500

08446500 PECOS RIVER NEAR GIRVIN, TX

LOCATION.--Lat 31°06'47", long 102°25'02", Pecos County, Hydrologic Unit 13070008, on right bank 2.1 mi upstream from Comanche Creek, 3.8 mi northwest of Girvin, and 7.2 mi upstream from bridge on U.S. Highway 67.

DRAINAGE AREA.--29,560 mi^2 approximately, for contributing area of supplementary gage 7.2 mi downstream.

PERIOD OF RECORD.--August 1939 to current year.
Water-quality records.--Chemical analyses: October 1939 to June 1941, October 1946 to September 1947, October 1953 to September 1982. Pesticide analyses: October 1968 to September 1974.

GAGE.--Water-stage recorder with concrete control and measuring flume. Datum of gage not determined. Supplementary water-stage recorder, used as regular gage prior to July 17, 1951, is now used only for peaks exceeding about 400 ft^3/s, 7.2 mi downstream at datum 2,269.65 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records poor. Flow is largely regulated by Red Bluff Reservoir (station 08410000). Numerous diversions above station for irrigation.

AVERAGE DISCHARGE.--47 years, 80.3 ft^3/s (58,180 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft^3/s Oct. 5, 1941 (gage height, 20.49 ft, at supplementary gage); minimum daily, 1.9 ft^3/s June 19, July 14, 1982.
Maximum stage since at least 1932, that of Oct. 5, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 220 ft^3/s Sept. 7 at 0300 hours (gage height, 2.52 ft); minimum daily, 15 ft^3/s May 2-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	23	25	25	25	21	19	16	32	33	29	35
2	21	23	25	25	25	21	19	15	58	37	36	30
3	21	23	25	25	25	21	17	15	72	40	37	32
4	22	23	25	25	25	20	16	15	42	43	35	78
5	22	23	25	25	25	20	16	15	33	47	34	51
6	22	22	25	25	25	20	16	16	30	53	33	90
7	22	22	24	26	25	20	16	20	32	56	31	193
8	22	22	24	26	25	20	18	23	32	56	30	103
9	23	22	24	25	24	20	23	24	29	55	29	44
10	23	22	24	25	24	20	26	25	25	54	30	37
11	23	22	24	25	24	19	28	25	24	51	33	37
12	23	23	23	24	24	19	28	24	24	51	33	36
13	23	23	23	25	24	19	28	24	24	52	34	34
14	23	23	24	25	24	19	27	25	24	55	34	32
15	23	23	24	26	24	20	26	25	24	57	37	35
16	23	23	24	27	24	22	24	25	24	56	35	37
17	23	23	24	28	24	29	23	25	24	46	35	36
18	58	23	24	30	24	33	22	25	23	32	37	33
19	61	23	24	30	24	36	21	24	23	26	35	30
20	27	24	24	29	23	38	20	24	23	25	32	28
21	25	24	24	28	23	40	20	24	23	26	28	28
22	34	24	24	27	22	50	19	23	23	26	26	27
23	58	24	24	27	23	61	19	23	23	26	24	25
24	28	24	24	26	22	66	20	22	24	27	24	25
25	26	24	24	26	22	46	19	22	24	27	22	24
26	25	24	24	26	22	33	20	22	24	27	[illegible]	24
27	24	24	24	26	22	27	19	[illegible]	24	26	20	23
28	23	24	24	25	21	24	18	23	25	24	32	23
29	23	25	24	25	---	23	17	23	27	23	77	22
30	23	25	25	25	---	21	17	23	29	21	58	22
31	23	---	25	25	---	20	---	25	---	20	36	---
TOTAL	838	697	750	807	664	868	621	682	868	1198	1036	1274
MEAN	27.0	23.2	24.2	26.0	23.7	28.0	20.7	22.0	28.9	38.6	33.4	42.5
MAX	61	25	25	30	25	66	28	25	72	57	77	193
MIN	21	22	23	24	21	19	16	15	23	20	20	22
AC-FT	1660	1380	1490	1600	1320	1720	1230	1350	1720	2380	2050	2530

CAL YR 1985 TOTAL 8092.7 MEAN 22.2 MAX 249 MIN 5.0 AC-FT 16050
WTR YR 1986 TOTAL 10303 MEAN 28.2 MAX 193 MIN 15 AC-FT 20440

08447410 PECOS RIVER NEAR LANGTRY, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°48'10", long 101°26'45", Val Verde County, Hydrologic Unit 13040212, at gaging station 7.4 mi east of Langtry, 15.0 mi upstream from confluence with the Rio Grande, and 638.2 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--35,179 mi .

PERIOD OF RECORD.--Chemical analyses: October 1954 to current year. Chemical and biochemical analyses: October 1974 to current year. Pesticide analyses: July 1975 to June 1982. Sediment analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1980 to September 1985 .
WATER TEMPERATURES: November 1960 to September 1985 .

INSTRUMENTATION.--Specific conductance and water temperature were recorded continuously from November 1980 to September 1985.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,000 microsiemens Mar. 21, 22, 1981; minimum daily, 230 microsiemens Oct. 11, 1981.
WATER TEMPERATURES: Maximum daily, 32.5°C June 8, 1981; minimum daily, 1.5°C Dec. 26, 27, 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT 09...	1025	163	2390	8.20	22.5	30	8.5	104	1.8	52	56	510
DEC 11...	0910	163	2730	8.10	15.5	1.9	8.6	90	0.8	K6	K12	600
FEB 19...	0900	460	4080	8.00	21.0	10	8.4	100	1.8	K9	21	920
APR 02...	0905	158	3850	8.10	21.0	19	8.7	104	1.6	K10	22	850
JUN 11...	0810	257	2750	8.00	28.0	1.5	8.7	--	0.6	27	35	570
AUG 13...	0905	323	3550	8.00	28.0	1.5	8.6	--	1.4	28	35	730

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT 09...	340	110	56	310	6	6.8	163	290	500	1.3	21	1450
DEC 11...	440	140	60	380	7	7.3	157	390	630	0.8	12	1680
FEB 19...	770	220	90	540	8	8.7	150	560	990	0.9	12	2460
APR 02...	690	190	90	530	8	8.9	155	550	920	0.9	9.4	2450
JUN 11...	410	130	59	370	7	7.4	156	340	590	0.8	15	1710
AUG 13...	570	180	67	460	8	8.5	156	480	820	0.8	13	2160

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
OCT 09...	1400	--	--	0.88	--	0.10	--	0.5	0.03	0.02	0.01	0.03
DEC 11...	1700	--	<0.01	0.90	0.05	0.06	0.45	0.5	<0.01	<0.01	0.01	0.03
FEB 19...	2500	0.76	0.01	0.77	0.07	0.06	0.33	0.4	<0.01	<0.01	<0.01	--
APR 02...	2400	--	<0.01	0.29	0.07	0.06	0.33	0.4	<0.01	<0.01	<0.01	--
JUN 11...	1600	0.50	0.01	0.51	0.06	0.05	0.34	0.4	0.02	0.01	<0.01	--
AUG 13...	2100	--	<0.01	0.20	0.05	0.05	0.25	0.3	0.01	<0.01	<0.01	--

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT 09...	79	35	93	<10	1	100	<10	<1	<1	<1	1	20
DEC 11...	15	6.6	88	--	--	--	--	--	--	--	--	--
FEB 19...	34	42	58	<10	<1	100	<10	<1	<1	1	1	30
APR 02...	28	12	86	--	--	--	--	--	--	--	--	--
JUN 11...	16	11	81	<10	1	100	<10	<1	<1	<1	<1	30
AUG 13...	24	21	65	--	--	--	--	--	--	--	--	--

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 09...	3	50	<10	<0.1	4	2	<1	<1	1900	15	<10
DEC 11...	--	--	--	--	--	--	--	--	--	--	--
FEB 19...	1	90	10	<0.1	8	<1	<1	<1	3300	26	<10
APR 02...	--	--	--	--	--	--	--	--	--	--	--
JUN 11...	<5	70	<10	<0.1	4	2	<1	<1	2300	16	40
AUG 13...	--	--	--	--	--	--	--	--	--	--	--

08449400 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TX

LOCATION.--Lat 29°40'35", long 101°00'00", Val Verde County, Hydrologic Unit 13040302, on left bank 10 mi east of Comstock, and 25.5 mi upstream from mouth.

DRAINAGE AREA.--3,961 mi .

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1978 to September 1985 .
WATER TEMPERATURES: February 1978 to September 1985 .

INSTRUMENTATION.--Specific conductance and water temperature were recorded continuously from October 1980 to September 1985.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 763 microsiemens Oct. 18, 1984; minimum daily, 105 micoromhos Oct. 20, 1983.
WATER TEMPERATURES: Maximum daily, 38.0°C May 6, 1984; minimum daily, 0.0 °C Feb. 1, 2, 1985.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT												
08...	1225	208	375	8.10	21.5	3.5	11.4	135	1.4	88	84	200
DEC												
10...	1205	200	382	8.10	19.5	4.5	10.2	116	1.4	K19	K10	190
FEB												
18...	1205	177	390	7.50	21.0	10	10.0	117	1.3	21	23	190
APR												
01...	1110	170	360	8.10	20.0	3.0	10.2	116	1.8	22	28	170
JUN												
10...	1055	289	365	7.80	26.5	1.7	10.0	130	0.7	21	68	170
AUG												
12...	1120	225	375	8.00	26.5	5.6	10.0	129	1.4	24	70	180

DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT												
08...	21	57	13	7.8	0.3	1.5	175	9.3	14	0.4	13	214
DEC												
10...	17	54	14	8.5	0.3	1.6	176	9.4	10	0.3	13	199
FEB												
18...	24	52	15	9.2	0.3	1.4	168	8.7	17	0.3	12	209
APR												
01...	9	43	15	9.2	0.3	1.5	160	13	12	0.3	11	176
JUN												
10...	1	49	12	7.4	0.3	1.5	171	8.4	11	0.3	14	209
AUG												
12...	16	47	14	8.6	0.3	1.3	159	9.3	13	0.4	15	165

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
OCT												
08...	220	--	--	1.50	--	0.04	--	0.5	0.04	0.02	0.01	0.03
DEC												
10...	220	--	<0.01	1.50	0.04	0.04	0.36	0.4	<0.01	<0.01	<0.01	--
FEB												
18...	220	1.48	0.02	1.50	0.04	0.05	0.56	0.6	<0.01	<0.01	<0.01	--
APR												
01...	200	--	<0.01	0.58	0.02	0.02	0.38	0.4	<0.01	<0.01	<0.01	--
JUN												
10...	210	0.96	0.02	0.98	0.05	0.04	0.45	0.5	0.01	<0.01	<0.01	--
AUG												
12...	200	1.09	0.01	1.10	0.05	0.04	1.2	1.3	0.01	<0.01	<0.01	--

08449400 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT												
08...	16	9.0	94	<10	1	100	<0.5	<1	<1	<3	1	4
DEC												
10...	12	6.5	54	--	--	--	--	--	--	--	--	--
FEB												
18...	22	11	95	<10	1	110	<0.5	<1	<1	<3	2	<3
APR												
01...	17	7.8	98	--	--	--	--	--	--	--	--	--
JUN												
10...	37	29	94	<10	1	100	0.5	<1	<1	<3	<1	3
AUG												
12...	17	10	96	--	--	--	--	--	--	--	--	--

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT											
08...	3	10	3	<0.1	<10	2	<1	<1	460	8	22
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
FEB											
18...	2	8	3	<10	<10	6	<1	<1	550	8	10
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	<5	9	3	<0.1	<10	3	<1	<1	470	9	4
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX

LOCATION.--Lat 29°25'30", long 101°27'00", Val Verde County, Hydrologic Unit 13080001, 2.2 mi downstream from Amistad Dam and 10 mi northwest of Del Rio.

DRAINAGE AREA.--123,143 mi .

PERIOD OF RECORD.--Chemical analyses: July 1968 to current year.

REMARKS.--The flow is controlled largely by releases from Amistad Reservoir. Records of daily mean discharge for water year 1986 are given in International Boundary and Water Commission Water Bulletins Nos. 55 and 56.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT									
31...	0830	1040	1120	8.00	20.5	270	150	73	21
NOV									
18...	0830	47	1110	7.70	20.0	270	150	73	21
DEC									
18...	0830	1060	1110	8.00	14.5	280	170	78	21
JAN									
15...	0745	1450	1130	8.00	11.0	270	160	77	20
FEB									
20...	0835	4270	1160	8.10	12.0	270	140	75	19
MAR									
19...	0830	6570	1160	8.00	12.0	270	140	75	19
APR									
17...	0810	2860	1200	7.80	20.0	280	150	78	20
MAY									
21...	0710	11400	1240	--	21.0	290	160	79	22
JUN									
18...	0700	1010	1180	7.80	22.0	280	170	79	21
JUL									
17...	0800	865	1210	7.80	23.0	290	160	81	22
AUG									
20...	0805	1610	1190	7.80	24.0	300	170	84	22
SEP									
17...	0735	1900	1210	7.70	24.0	270	140	77	19

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
31...	130	4	5.3	118	250	140	18	710
NOV								
18...	130	4	4.9	114	260	140	17	710
DEC								
18...	140	4	5.3	116	280	140	18	750
JAN								
15...	140	4	5.4	119	270	130	17	730
FEB								
20...	130	4	5.3	125	230	130	16	680
MAR								
19...	130	4	5.4	124	250	130	16	700
APR								
17...	140	4	5.4	131	260	140	16	740
MAY								
21...	150	4	5.7	131	280	160	16	790
JUN								
18...	140	4	5.3	115	250	150	16	730
JUL								
17...	140	4	5.3	130	260	140	18	740
AUG								
20...	140	4	5.3	133	260	150	18	760
SEP								
17...	140	4	5.7	130	260	150	17	750

08459000 RIO GRANDE AT LAREDO, TX
(National stream-quality accounting network)

LOCATION.--Lat 27°29'45", long 99 29'30", Webb County, Hydrologic Unit 13080002, at gaging station 1.1 mi downstream from the highway bridge between Laredo and Nuevo Laredo, Tamaulipas, Mex., and 891.0 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--132,578 mi , United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 45.

PERIOD OF RECORD.--Chemical analyses: July 1955 to current year. Chemical, biochemical, and sediment analyses: January 1973 to September 1986. Pesticide analyses: March to May 1979. Sediment analyses: May 1973 to September 1986.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1986.
WATER TEMPERATURES: October 1974 to August 1976.

REMARKS.--Records of discharge for water year 1986 are given in International Boundary and Water Commission Water Bulletins Nos. 55 and 56.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,690 microsiemens June 1, 1963; minimum daily, 214 microsiemens Sept. 26, 1964

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,240 microsiemens Feb. 10, May 16; minimum daily, 330 microsiemens Oct. 5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT 24...	0900	2510	358	7.60	23.0	200	6.9	81	2.2	6000	4700	120
JAN 28...	1055	2050	1140	8.40	14.5	14	10.1	99	1.1	15000	11000	280
MAR 11...	1655	6220	1180	8.30	21.0	68	8.1	93	1.1	K7400	K1800	270
MAY 13...	1530	7560	1220	7.70	24.0	30	7.6	92	1.0	K12000	3600	280
JUL 02...	0830	3500	592	8.20	27.5	--	8.0	--	1.5	44000	10000	210
AUG 27...	0900	1650	1040	--	27.5	53	7.0	--	0.3	3300	3200	260

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT 24...	34	38	5.4	27	1	4.7	84	54	27	0.2	7.9	221
JAN 28...	150	79	20	120	3	4.8	130	250	120	1.0	10	704
MAR 11...	140	75	19	130	4	5.4	130	270	140	1.1	15	745
MAY 13...	150	79	21	140	4	5.4	135	250	140	1.0	16	799
JUL 02...	64	68	10	43	1	2.8	147	100	48	0.4	12	378
AUG 27...	150	72	19	110	3	5.0	105	230	120	0.8	16	650

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	SEDIMENT, SUSPENDED (MG/L)
OCT 24...	220	--	0.33	--	0.06	--	1.0	0.21	0.03	<0.01	--	219
JAN 28...	690	<0.01	0.20	0.06	0.05	0.54	0.6	0.03	0.01	<0.01	--	28
MAR 11...	730	<0.01	0.35	0.02	0.02	0.48	0.5	0.12	0.02	<0.01	--	195
MAY 13...	730	<0.01	0.43	0.06	0.06	0.34	0.4	0.036	0.02	0.01	0.03	72
JUL 02...	370	<0.01	0.69	0.05	0.05	0.65	0.7	0.03	0.03	0.01	0.03	133
AUG 27...	640	<0.01	0.20	0.07	0.04	0.23	0.3	0.06	<0.01	<0.01	--	85

08459000 RIO GRANDE AT LAREDO, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT											
24...	1480	99	60	2	69	<0.5	1	<1	<3	2	42
JAN											
28...	155	91	<10	3	100	<0.5	<1	<1	<3	6	3
MAR											
11...	3270	86	--	--	--	--	--	--	--	--	--
MAY											
13...	1470	90	--	--	--	--	--	--	--	--	--
JUL											
02...	1260	90	--	--	--	--	--	--	--	--	--
AUG											
27...	379	98	20	4	110	1	2	<1	<3	<1	6

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT											
24...	<1	14	<1	<0.1	<10	3	<1	<1	420	<6	6
JAN											
28...	<1	52	2	<0.1	<10	7	<1	24	1500	<6	11
MAR											
11...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	--	--	--	--	--	--	--	--	--	--	--
AUG											
27...	<5	55	4	<0.1	<10	1	<1	<1	1300	<6	11

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1985	99730	606	380	102000	56	15100	120	32500	190
NOV.	1985	56600	932	576	88100	98	14900	190	29800	260
DEC.	1985	52200	1010	623	87900	110	15500	210	30200	270
JAN.	1986	57950	998	615	96200	110	16900	210	33000	270
FEB.	1986	84030	1090	671	152000	120	28000	240	54400	280
MAR.	1986	183720	1100	676	335000	120	62000	240	117900	280
APR.	1986	186090	1150	703	353000	130	66700	250	125400	280
MAY	1986	311160	1140	700	588000	130	110900	250	208600	280
JUNE	1986	135920	809	503	185000	80	29500	170	60800	240
JULY	1986	50820	789	492	67500	77	10500	160	22000	240
AUG.	1986	50529	955	591	80600	100	13800	200	27300	270
SEPT	1986	110290	707	442	132000	66	19700	140	42100	220
TOTAL		1379039	**	**	2268000	**	404000	**	783000	**
WTD.AVG.		3778	989	609	**	110	**	210	**	260

08459000 RIO GRANDE AT LAREDO, TX--Continued
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	439	702	996	1080	1100	633	1190	1210	931	622	869	703
2	408	748	868	1080	801	1160	1180	1200	581	632	855	616
3	429	972	1050	1070	1110	1160	1000	1200	770	599	857	1010
4	375	871	1050	839	1110	1180	1180	1210	616	725	879	1030
5	330	808	1060	781	1110	1160	1180	1210	846	782	885	1030
6	428	849	1060	1070	1110	836	1190	1210	691	644	876	1020
7	618	893	1060	1090	1130	1140	1180	1220	951	656	873	990
8	713	897	739	1080	1140	1160	1060	1230	1020	758	888	878
9	854	926	1060	1090	1070	1160	850	791	792	814	888	653
10	932	783	1090	798	1240	1130	778	802	948	829	928	585
11	969	947	1090	792	1170	1130	734	763	932	844	969	600
12	979	968	1100	703	1170	1130	1170	829	851	851	998	609
13	984	943	1090	1070	1150	1160	1190	1010	708	870	1030	606
14	776	976	1070	1060	1130	1170	1190	1220	836	883	1040	628
15	958	993	1070	1050	1150	1170	776	1220	978	911	922	756
16	956	803	770	1040	1160	1170	1170	1240	1050	905	878	537
17	820	648	1050	1040	854	1150	1180	1150	748	889	1040	620
18	915	659	1070	1040	1170	1130	1180	1150	994	888	1050	651
19	961	976	1060	1050	1170	1140	1180	1190	1060	843	1050	683
20	882	920	761	1070	1170	1140	1170	1220	1130	713	1050	649
21	415	1000	1070	1090	1160	1140	1190	1200	1100	738	776	688
22	411	1020	1080	1100	743	1170	1230	1200	729	828	824	719
23	351	1050	1070	1090	1160	861	1210	1220	1080	861	1070	756
24	391	1070	840	1090	1170	1160	1200	1230	1090	854	1080	763
25	472	1070	856	799	1170	1150	1190	1220	1090	830	961	765
26	610	1070	1070	637	1170	763	1210	927	818	836	1060	617
27	751	1070	1080	739	1170	1130	1220	1220	1070	860	1050	789
28	808	1070	854	1060	768	1170	1220	1220	1020	872	1040	807
29	918	1140	1090	1090	---	1200	1170	1200	652	874	1040	785
30	989	1190	1090	1100	---	954	1180	1150	664	875	803	811
31	965	---	1070	1100	---	1200	---	957	---	878	795	---
MEAN	703	934	1010	993	1100	1100	1120	1130	892	805	946	745

08461300 RIO GRANDE BELOW FALCON DAM, TX

LOCATION.--Lat 26°33'25", long 99°10'05", Starr County, Hydrologic Unit 13090001, U.S. Tailrace at Falcon Dam.

DRAINAGE AREA.--159,270 mi , United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: July 1955 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1986 are given in International Boundary and Water Commission Water Bulletins Nos. 55 and 56.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 16...	1035	2200	1100	7.80	25.5	260	160	68	21
NOV 18...	1315	2200	1020	7.30	23.5	250	150	67	20
DEC 16...	0915	2600	1110	7.80	18.0	250	150	69	20
JAN 13...	1300	6190	1020	7.80	15.5	260	150	70	20
FEB 21...	1100	953	1000	7.70	15.5	260	150	70	20
MAR 19...	1130	2860	1070	7.70	20.0	250	140	68	19
APR 21...	1100	12000	1120	7.70	23.5	260	150	71	21
MAY 19...	1300	6240	1170	--	26.0	280	160	74	22
JUN 16...	1130	18	1130	7.60	26.5	260	150	71	20
JUL 18...	1400	1800	1110	7.70	28.0	250	140	68	19
AUG 18...	1000	2600	1080	7.70	28.0	250	150	68	20
SEP 22...	1100	2050	1070	7.60	28.0	230	130	63	18

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 16...	130	4	5.7	98	260	140	11	690
NOV 18...	120	3	4.9	98	240	130	10	650
DEC 16...	120	3	5.7	100	240	130	11	660
JAN 13...	120	3	5.4	105	240	120	10	650
FEB 21...	120	3	9.3	112	250	120	9.9	670
MAR 19...	120	3	5.4	112	230	120	10	640
APR 21...	130	4	5.3	111	250	130	12	690
MAY 19...	140	4	5.8	112	280	150	14	750
JUN 16...	130	4	5.5	112	240	140	14	690
JUL 18...	130	4	5.0	107	240	130	14	670
AUG 18...	130	4	5.7	102	240	130	13	670
SEP 22...	130	4	6.0	98	240	130	12	660

08464700 RIO GRANDE AT FORT RINGGOLD, RIO GRANDE CITY, TX

LOCATION.--Lat 26°22'05", long 98°48'20", Starr County, Hydrologic Unit 13090001, at gaging station about 1 mi downstream from Rio Grande City, 3.9 mi downstream from mouth of Rio San Juan, and 1,014.3 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--174,362 mi , United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: January 1959 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1986 are given in International Boundry and Water Commission Water Bulletins Nos. 55 and 56.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 18...	0930	1130	1100	7.90	26.0	250	150	69	19
NOV 19...	1045	1420	1210	7.40	24.0	280	180	76	22
DEC 23...	1345	619	1210	7.80	20.0	290	180	80	23
JAN 17...	1045	7900	1030	7.80	15.0	250	150	70	19
FEB 21...	1030	935	1400	8.00	22.0	310	180	82	25
MAR 18...	1000	3070	1090	7.80	21.0	250	140	68	19
APR 14...	1000	10600	1120	7.60	24.0	270	150	72	21
MAY 19...	1030	10200	1170	--	25.5	280	160	74	22
JUN 20...	1345	480	1830	7.60	32.0	360	230	110	20
JUL 18...	0915	1800	1200	7.70	24.0	250	150	69	20
AUG 22...	0845	1670	1170	7.60	26.5	260	160	70	21
SEP 17...	1230	1460	1150	7.60	30.5	260	160	70	20

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 18...	130	4	5.7	105	220	150	11	670
NOV 19...	150	4	5.4	103	260	170	10	760
DEC 23...	160	4	5.5	115	280	180	11	810
JAN 17...	120	3	5.4	107	250	120	10	660
FEB 21...	180	5	6.0	128	310	200	8.8	890
MAR 18...	120	3	5.7	113	240	120	10	650
APR 14...	130	4	5.4	113	250	130	12	690
MAY 19...	150	4	6.2	112	280	150	14	760
JUN 20...	240	6	7.7	131	250	370	13	1100
JUL 18...	140	4	5.2	105	250	150	14	710
AUG 22...	150	4	5.7	103	260	150	13	730
SEP 17...	140	4	6.6	102	250	150	13	710

08466300 RIO GRANDE NEAR LOS EBANOS, TX

LOCATION.--Lat 26°14'15", long 98°33'49", Hidalgo County, Hydrologic Unit 13090001, on Farm Road 886 at U.S. Border Port of Entry near Los Ebanos and at mile 204.37.

PERIOD OF RECORD.--Chemical analyses: June 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 18...	1033	1940	886	7.80	27.0	210	110	61	13
NOV 19...	1145	[illegible]	1380	7.30	26.0	290	180	79	23
DEC 23...	1445	1290	1490	7.70	20.0	370	240	100	30
JAN 17...	1515	7800	1030	7.80	15.5	250	150	68	20
FEB 21...	1430	1320	1340	7.90	23.5	310	180	83	24
MAR 18...	1045	3350	1140	7.80	22.0	260	150	73	20
APR 14...	1200	10200	1130	7.70	25.0	270	150	72	21
MAY 20...	0930	7940	1190	--	25.0	280	160	74	22
JUN 20...	1215	595	2030	7.70	31.0	490	310	140	34
JUL 18...	1100	2110	1380	7.70	29.0	300	180	80	24
AUG 18...	1310	2270	1220	7.90	30.0	280	160	74	22
SEP 19...	0830	1550	1200	7.70	33.5	270	160	73	21

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 18...	100	3	5.3	100	170	110	10	530
NOV 19...	150	4	4.7	116	270	170	11	780
DEC 23...	190	4	5.7	131	330	240	12	990
JAN 17...	120	3	2.3	107	240	120	10	640
FEB 21...	160	4	5.5	130	260	180	9.7	800
MAR 18...	130	4	6.2	118	250	130	10	690
APR 14...	130	4	5.4	112	250	130	12	690
MAY 20...	150	4	5.7	112	290	150	14	770
JUN 20...	260	5	6.8	182	370	340	19	1300
JUL 18...	170	4	5.5	117	290	190	16	850
AUG 18...	150	4	5.9	111	270	160	14	760
SEP 19...	150	4	6.4	107	260	160	14	750

08469200 RIO GRANDE BELOW ANZALDUAS DAM, TX

LOCATION.--Lat 26°08'00", long 98°20'05", Hidalgo County, Hydrologic Unit 13090002, at gaging station 0.5 mi downstream from Anzalduas Dam, 12.2 mi from Hidalgo, and 1,077.1 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--176,112 mi , United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 45.

PERIOD OF RECORD.--Chemical analyses: March 1959 to current year. Pesticide analyses: October 1967 to July 1972.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1977 to current year.

REMARKS.--Records of and discharge for water year 1986 are given in International Boundary and Water Commission Water Bulletins Nos. 55 and 56. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,310 microsiemens Feb. 12, 1984; minimum daily, 392 microsiemens Feb. 27, 1983.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,450 microsiemens Oct. 17; minimum daily 573 microsiemens Oct. 31.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT									
17...	0750	610	2480	7.90	25.5	560	380	150	44
NOV									
19...	1445	900	1360	7.50	24.5	320	200	84	26
DEC									
17...	09[illegible]	1270	1470	7.90	14.5	340	210	92	27
JAN									
15...	0935	1500	1190	7.70	14.5	270	160	72	21
FEB									
19...	1145	350	1550	7.90	18.5	320	190	87	26
MAR									
19...	0855	1450	1180	7.90	21.0	280	160	77	22
APR									
22...	0910	3780	1240	7.70	24.0	270	160	73	21
MAY									
19...	0830	2870	1320	--	23.5	290	180	80	23
JUN									
20...	1310	149	1210	7.70	31.0	220	130	68	13
JUL									
14...	0800	1600	1560	7.80	26.5	300	180	82	24
AUG									
18...	1010	1150	1430	7.90	30.0	300	180	81	24
SEP									
15...	0830	900	1520	7.80	29.0	300	190	81	24

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
17...	330	6	7.3	177	470	460	18	1600
NOV								
19...	170	4	5.5	116	300	210	9.6	870
DEC								
17...	170	4	5.7	127	310	190	12	880
JAN								
15...	140	4	4.3	110	270	140	11	720
FEB								
19...	180	5	5.4	132	320	190	11	900
MAR								
19...	140	4	6.2	118	260	140	10	730
APR								
22...	140	4	5.4	112	260	140	13	720
MAY								
19...	150	4	5.7	115	300	160	14	800
JUN								
20...	140	4	4.8	95	200	170	10	660
JUL								
14...	170	4	5.6	120	310	190	15	870
AUG								
18...	160	4	6.1	118	300	180	15	840
SEP								
15...	180	5	5.7	116	310	190	14	870

08469200 RIO GRANDE BELOW ANZALDUAS DAM, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1985 TO SEPTEMBER 1986

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT. 1985	20187	1320	815	44400	180	9930	280	15200	310
NOV. 1985	17449	1400	860	40500	190	9100	290	13900	330
DEC. 1985	19411	1400	860	45100	190	10100	290	15400	330
JAN. 1986	49000	1160	711	94100	150	19600	250	33300	280
FEB. 1986	20341	1270	782	43000	170	9250	270	15000	300
MAR. 1986	46470	1260	771	96700	160	20700	270	33800	300
APR. 1986	78900	1170	718	153000	150	31900	250	54100	280
MAY 1986	72277	1250	769	150000	160	32000	270	52500	300
JUNE 1986	34335	1200	734	68100	160	14800	250	23600	280
JULY 1986	43271	1360	834	97500	180	21400	290	33700	320
AUG. 1986	41106	1280	786	87200	170	18700	270	30400	300
SEPT 1986	21405	1330	818	47300	180	10300	280	16300	310
TOTAL	464152	**	**	967000	**	208000	**	337000	**
WTD.AVG.	1272	1260	772	**	170	**	270	**	300

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1330	613	1290	1640	1110	1540	1150	1210	1240	1210	1240	1240
2	1250	662	1270	1610	1120	1540	1160	980	1500	1240	1230	1240
3	1230	682	1290	1180	1120	1450	1150	1310	1660	1590	1390	1240
4	1230	774	1430	1170	1110	1370	1160	1320	1740	1500	1270	1250
5	1310	1140	1630	1180	1170	1280	1160	1200	1910	1540	1270	1270
6	1240	1520	1530	1220	1150	1320	1150	1220	1600	1540	1240	1290
7	1230	1840	1500	1530	1180	1400	1140	1220	1620	1450	1250	1310
8	1230	1810	1760	1220	1200	1390	1160	1300	1670	1360	1230	1280
9	1220	1650	2120	1190	1200	1330	1150	1260	1510	1410	1230	1310
10	1210	1500	1770	1210	1240	1270	1150	1230	1070	1300	1230	1400
11	1220	1500	1560	1180	1340	1210	1190	1230	872	1350	1230	1530
12	1270	1460	1470	1150	1350	1210	1160	1220	750	1260	1250	1750
13	1330	1430	1450	1210	1310	1390	1160	1260	974	1270	1270	2000
14	1410	1450	1410	1180	1320	1240	1150	1260	1080	1320	1270	1840
15	1510	1460	1320	1130	1430	1240	1150	1260	952	1310	1260	1450
16	2060	1480	1290	1130	1330	1270	1180	1240	966	1270	1270	1120
17	2450	1400	1380	1110	1310	1300	1150	1250	1060	1220	1300	1000
18	1870	1380	1290	1110	1350	1340	1160	1260	1220	1270	1330	1520
19	1740	1380	1240	1100	1420	1190	1160	1280	1220	1250	1290	1410
20	1710	1430	1100	1100	1380	1190	1160	1260	1150	1300	1270	1380
21	1620	1500	1130	1100	1430	1170	1180	1270	1140	1430	1290	1380
22	1110	1660	1130	1090	1420	1180	1210	1310	1210	1390	1290	1320
23	1340	1490	1130	1080	1430	1180	1180	1320	1420	1330	1300	1290
24	1150	1480	1160	1090	1530	1150	1200	1310	1720	1320	1280	1300
25	694	1440	1180	1080	1450	1150	1220	1320	2050	1260	1290	1260
26	786	1380	1200	1080	1520	1150	1200	1330	2200	1260	1290	1220
27	725	1360	1290	1090	1620	1150	1200	1310	2200	1330	1310	1220
28	880	1340	1330	1100	1560	1160	1210	1280	2330	1460	1320	1240
29	644	1320	1320	1110	---	1160	1210	1320	2100	1430	1400	1300
30	624	1290	1300	1120	---	1160	1210	1310	1730	1420	1370	1370
31	573	---	1280	1120	---	1170	---	1330	---	1270	1310	---
MEAN	1260	1360	1370	1180	1330	1270	1170	1260	1460	1350	1280	1360

08475000 RIO GRANDE NEAR BROWNSVILLE, TX
(National stream-quality accounting network)

LOCATION.--Lat 25°52'35", long 97°27'15", Cameron County, Hydrologic Unit 13090002, at International Boundary and Water Commission gaging station, 1,000 ft downstream from El Jardin pumping plant, 6.8 mi below International Bridge between Brownsville and Matamoros, Tamps., Mex., and 48.8 mi above the Gulf of Mexico.

DRAINAGE AREA.--176,333 mi .

PERIOD OF RECORD.--Chemical analyses: January 1932, March 1943 to February 1944, February 1966 to September 1974. Chemical and biochemical analyses: October 1974 to current year. Pesticide analyses: May 1975 to May 1982. Sediment analyses: February 1966 to current year.
to current year. Pesticide analyses: October 1975 to September 1982. Sediment analyses: October 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1967 to September 1983.
WATER TEMPERATURES: October 1966 to September 1983.
SUSPENDED-SEDIMENT DISCHARGE: February 1966 to September 1983.

REMARKS.--Records of discharge furnished by International Boundary and Water Commission.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,130 microsiemens May 29, 1972; minimum daily, 337 microsiemens Sept. 3, 1967.
WATER TEMPERATURES (1966-69, 1970-75, 1977-83): Maximum daily, 35.0°C on several days during summer months of 1982 and 1983; minimum daily, 8.0°C Jan. 10, 1967.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 6,000 mg/L Feb. 28, 1983; minimum daily mean, 4 mg/L Apr. 26, 1970, Aug. 16, 18, 24, 27, 1977.
SEDIMENT LOADS: Maximum daily, 181,000 tons Feb. 28, 1983; minimum daily, 0.12 tons Aug. 26, 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT 23...	1212	856	1430	7.90	27.0	67	6.8	--	2.5	K13000	2600	410
JAN 29...	1143	29	1250	8.60	18.5	33	10.9	115	4.9	K2000	K30	300
MAY 14...	1330	268	1340	8.20	28.0	30	8.7	--	3.8	720	130	290
AUG 26...	0900	E0.12	2090	--	27.5	8.0	6.5	--	3.0	590	210	490

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT 23...	230	110	33	170	4	6.3	186	300	210	0.7	19	978
JAN 29...	170	80	23	150	4	5.4	130	280	160	0.8	10	788
MAY 14...	170	77	23	160	4	5.9	117	270	160	0.9	12	837
AUG 26...	270	130	39	250	5	7.6	222	390	320	0.7	24	1420

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	SEDIMENT, SUSPENDED (MG/L)
OCT 23...	960	<0.01	<0.10	0.09	0.03	0.71	0.8	0.17	<0.01	0.02	0.06	276
JAN 29...	790	0.01	<0.10	0.02	0.02	0.88	0.9	0.06	<0.01	<0.01	--	36
MAY 14...	780	<0.01	<0.10	0.11	0.05	0.69	0.8	0.10	0.01	<0.01	--	48
AUG 26...	1300	<0.01	<0.10	0.13	0.08	0.87	1.0	0.08	0.01	<0.01	--	--

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT 23...	638	48	30	6	130	<0.5	<1	<1	<3	1	<3
JAN 29...	2.8	97	10	3	96	<0.5	<1	<1	<3	1	3
MAY 14...	35	86	--	--	--	--	--	--	--	--	--
AUG 26...	--	--	<10	5	200	<10	<1	<1	2	2	20

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
23...	1	59	<1	0.1	10	1	<1	<1	1900	<6	5
JAN											
29...	1	49	<1	0.1	<10	1	<1	<1	1500	<6	8
MAY											
14...	--	--	--	--	--	--	--	--	--	--	--
AUG											
26...	<5	70	250	<0.1	6	1	<1	<1	2500	<4	<10

Because the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage of those events. The data collected for special reasons are called measurements at miscellaneous sites.

Streamflow data collected at partial-record stations where water-quality data other than observations of water temperature are not obtained are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations; the second is a table of annual maximum stage and (or) discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low and high flows are given in a third table. Discharge measurements and water-quality data collected at partial-record stations are presented in downstream order in the section of this report entitled "Gaging-station records."

Low-flow partial-record stations

Measurements of streamflow at low-flow partial-record stations that are not published in the gaging-station section are given in the following table. Most of the measurements of low flow were made during periods when streamflow was sustained primarily by ground-water discharge. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will indicate the low-flow potential of the stream. The years listed in the column headed "Period of record" identifies the water years in which measurements were made at the same or at practically the same site.

Discharge measurements made at low-flow partial-record station during water year 1986

Station no.	Station name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		Colorado River basin				
08129500	Dove Creek Spring near Knickerbocker, Tex.	Lat 31°11'06", long 100°43'51", Irion County, at headquarters ranchhouse, 500 ft upstream from Dove Creek, 1.8 mi upstream from Stilson Dam on Dove Creek, and 8.5 mi southwest of Knickerbocker.	(a)	1944-58†, 1959-86	10- 1-85 11-25-85 1- 9-86 2-19-86 4-16-86 7-16-86 9- 4-86	8.78 10.1 6.65 6.99 6.86 10.5 9.43
08143900	Springs at Fort McKavett, Tex.	Lat 30°50'03", long 100°05'37", Menard County, at Fort McKavett.	(a)	1902, 1905, 1922, 1942, 1948-49, 1951-52, 1955-56, 1958-86	2-21-86 8-15-86	12.7 14.2
08146500	San Saba Springs, at San Saba, Tex.	Lat 31°11'44", long 98°42'42", San Saba County, 150 ft upstream from bridge on U.S. Highway 190 at San Saba and 0.8 mi east of courthouse.	(a)	1939, 1952, 1957, 1959-86	2-11-86 6-24-86	8.49 13.2
08149400	South Llano River near Telegraph, Tex.	Lat 30°15'43" long 99°56'01", Edwards County, 3.7 mi upstream from Paint Creek, 5.7 mi south of Telegraph, and 18.7 mi southwest of Junction.	(a)	1939, 1952, 1956, 1959-86	4-15-86 8-15-86	17.5 18.0
08149500	Seven Hundred Springs near Telegraph, Tex.	Lat 30°16'12", long 99°55'22", Edwards County, about 3 mi upstream from Paint Creek, about 5 mi south of Telegraph, and about 18 mi southwest of Junction.	(a)	1939, 1952, 1955-56, 1959-86	4-16-86 8-15-86	11.5 17.9
08155400	Barton Creek above Barton Springs at Austin, Tex.	Lat 30°15'48", long 97°46'19", Travis County, just upstream from upper dam of Barton Creek swimming pool in Zilker Park and upstream from all springs known as Barton Springs at Austin.	125	1919-86	10- 3-85 3-28-86 7- 1-86 9-22-86	0 1.07 3.55 .23
		Guadalupe River basin				
08168000	Hueco Springs near New Braunfels, Tex.	Lat 29°45'33", long 98°08'23", Comal County, two springs located 400 and 500 ft west of the Guadalupe River, 600 ft downstream from the mouth of Elm Creek, and 4.2 mi north of New Braunfels.	(a)	1944-86	10-28-85 11-22-85 1-17-86 3- 4-86 4-29-86 6-25-86 8-21-86	64.2 36.6 59.0 50.2 22.8 84.0 36.3

† Operated as a continuous-record station.
a Not applicable.

Discharge measurements made at low-flow partial-record stations during water year 1986--Continued

Station no.	Station name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
Guadalupe River basin--Continued						
08168600	Blieders Creek at New Braunfels, Tex.	Lat 29°43'14", long 98°07'23", Comal County, at Grove Avenue crossing in northwest New Braunfels and 0.25 mi upstream from mouth.	-	1962-86	1-27-86	0
					7-30-86	0
08168700	Panther Canyon at New Braunfels, Tex.	Lat 29°42'47", long 98°08'14", Comal County, at Landa Park Drive crossing in Landa Park at New Braunfels.	-	1962-86	1-27-86	0
					7-30-86	0
08168800	Dry Comal Creek at New Braunfels, Tex.	Lat 29°41'52", long 98°08'11", Comal County, at Floral Avenue crossing in New Braunfels, 0.6 mi upstream from Missouri Pacific Railroad Co. bridge, and 0.9 mi upstream from mouth.	-	1962-86	1-28-86	2.10
					7-30-86	.59
Nueces River basin						
08204000	Leona River spring flow near Uvalde, Tex.	Lat 29°09'15", long 99°44'35", Uvalde County, at old road crossing on White's Ranch, 2.0 mi downstream from Cooks Slough, and 4.7 mi southeast of Uvalde.	(a)	1935-65†, 1966-86	12-16-85	33.3
					12-16-85	31.2
					2- 4-86	25.2
					4-16-86	21.5
					6-10-86	24.3
					8-13-86	10.3
Rio Grande basin						
08425500	Phantom Lake Spring near Toyahvale, Tex.	Lat 30°56'01", long 103°50'43", Jeff Davis County, 375 ft downstream from source of spring, 3.5 mi southwest of Toyahvale, and 7.0 mi southwest of Balmorhea.	(a)	1931-33†, 1942-66†, 1967-86†	10- 2-85	11.1
					12- 4-85	1.75
					1-28-86	1.61
					4- 1-86	1.12
					6- 4-86	.76
					8- 5-86	1.86
08427000	Giffin Springs at Toyahvale, Tex.	Lat 30°56'51", long 103°47'19", Reeves County, 2,000 ft northwest of post office in Toyahvale.	(a)	1919, 1922-23, 1925, 1932-33†, 1941-86	12- 4-85	3.93
					8- 5-86	4.52
08427500	San Solomon Springs at Toyahvale, Tex.	Lat 30°56'34", long 103°47'16", Reeves County, on South Canal at Toyahvale, 540 ft downstream from headgate at pool of springs, and 4.0 mi southwest of Balmorhea.	(a)	1931-33†, 1941-65†, 1966-86	10- 2-85	29.7
					12- 4-85	27.1
					1-28-86	30.3
					4- 1-86	28.4
					6- 4-86	26.1
					8- 5-86	28.1
08456300 c/	Las Moras Springs at Brackettville, Tex.	Lat 29°18'33", long 100°25'13", Kinney County, in springflow pool at Brackettville, 160 ft south of U.S. Highway 90, and 1,550 ft upstream from bridge on Brackettville-Fort Clark Road.	(a)	1896, 1899-1900, 1902, 1904-06, 1910, 1912, 1925, 1928, 1951-86	10- 3-85	24.0
					11-13-85	23.6
					12-10-85	18.4
					1-14-86	14.0
					2-19-86	13.8
					3-11-86	9.64
					4- 8-86	8.38
					5-13-86	13.8
					6-10-86	27.0
					7- 8-86	26.3
					8-12-86	11.7
					9-11-86	12.7

† Operated as a continuous-record station.
a Not applicable.
c Records were furnished by the International Boundary and Water Commission.

Crest-stage partial-record stations

The following table contains annual maximum stage and (or) discharge at partial-record stations operated primarily for the purpose of defining the flooding characteristics of the streams. At stations where discharge is given, or is footnoted "to be determined", a stage-discharge relation has been, or will be, defined by discharge measurements obtained by current meter or by indirect procedures. Water-stage recorders are located at these flood-hydrograph stations to facilitate complete hydrograph definition. At stations where only the maximum stage is given (discharge column is dashed), data are generally collected for use in stage-frequency studies of flood-profile definition. Gages at these stations usually consist of a device that will register the peak stage occuring between inspections of the gage. The years used in the column "Period of record" identify the years in which the annual maximum has been determined.

Annual maximum stage and (or) discharge during water year 1986

Station no.	Station name	Location	Drainage area (mi²)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft³/s)
Colorado River basin							
08133500	North Concho River at Sterling City, Tex.	Lat 31°49'48", long 100°59'36", Sterling County, on right bank 100 ft upstream from bridge on State Highway 163, 0.5 mi south of Sterling City, 4.0 mi upstream from Sterling Creek, 5.1 mi downstream from Lacy Creek, and at mile 57.2.	588	1939-86	5-25-86 6-17-86 9- 5-86 9- 6-86	13.40 10.11 10.79 10.25	1,110 496 177 616
08142000	Hords Creek at Coleman, Tex.	Lat 31°50'50", long 99°25'25", Coleman County, on right bank in city park, 1,250 ft downstream from bridge on U.S. Highways 84 and 283 and State Highway 206, 1 mi north of courthouse in Coleman, 3.9 mi downstream from Bachelor Creek, 12 mi downstream from Hords Creek Dam, and at mile 14.3.	107	1941-70†, 1971-86	6- 5-86	10.25	3,850
08158100	Walnut Creek at Farm road 1325 near Austin, Tex.	Lat 30°24'35", long 97°42'41", Travis County, on downstream side of bridge on Farm Road 1325 and 9.5 mi north of the State Capitol Building in Austin.	12.6	1975-86	10-19-85	7.94	758
08158300	Ferguson Branch at Springdale Road, Austin, Tex.	Lat 30°19'53", long 97°39'12", Travis County, on downstream side of bridge on Springdale Road in Austin.	1.63	1975-86	10-19-85	6.00	178
08158380	Little Walnut Creek at Georgian Drive, Austin, Tex.	Lat 30°21'15", long 97°41'52", Travis County, on left upstream side of bridge on Georgian Drive in Austin.	5.22	1983-86	6-17-86	10.80	2,890
08158880	Boggy Creek (South) at Circle S Road, Austin, Tex.	Lat 30°10'50", long 97°46'55", Travis County, on downstream side of bridge on Circle S Road in Austin.	3.58	1976-86	5- 9-86	8.71	1,970
Guadalupe River basin							
08169500	Guadalupe River at New Braunfels, Tex.	Lat 29°41'52", long 98°06'23", Comal County, Comal Mills in New Braunfels and 0.4 mi upstream from Interstate Highway 35.	1,652	1898-1902, 1915-27†, 1974-86	11-24-85	14.17	11,400
08173900	Guadalupe River at Gonzales, Tex.	Lat 29°29'49", long 97°27'17", Gonzales County, at Gonzales Hydro Station in Gonzales and 1.4 mi upstream from U.S. Highway 183.	-	1977-86	11-26-85	28.06	27,600
08177820	Olmos Creek at Hildebrand Street, San Antonio, Tex.	Lat 29°27'56", long 98°28'01", Bexar County, at upstream side of bridge on Hildebrand Street, 0.8 mi downstream from Olmos dam in San Antonio.	34.8	1980-86	6- 4-86	11.31	2,210
08177900	San Antonio River at Navarro Street, San Antonio, Tex.	Lat 29°25'50", long 98°29'24", Bexar County, at bridge on Navarro Street in San Antonio.	-	1973-86	6- 4-86	a642.21	-
08177920	San Antonio River at Dolorosa Street, San Antonio, Tex.	Lat 29°25'24", long 98°29'32", Bexar County, just downstream from Dolorosa Street in San Antonio.	-	1980-86	10-15-85	22.02	-
08178100	San Pedro Creek at Santa Rosa Street, San Antonio, Tex.	Lat 29°25'51", long 98°29'49", Bexar County, at bridge on Santa Rosa Street in San Antonio.	-	1973-86	6- 4-86	a647.61	-
08178350	Martinez Creek at Fredericksburg Road, San Antonio, Tex.	Lat 29°27'22", long 98°31'04", Bexar County, at bridge on Fredericksburg Road in San Antonio.	-	1973-86	6- 4-86	a684.43	-
08178400	Alazan Creek at West Martin Street, San Antonio, Tex.	Lat 29°25'51", long 98°30'51", Bexar County, at bridge on West Martin Street in San Antonio.	-	1973-86	6- 4-86	a644.91	-
08178450	Apache Creek at South Zarzamora Street, San Antonio, Tex.	Lat 29°24'47", long 98°31'42", Bexar County, at bridge on South Zarzamora Street in San Antonio.	-	1973-86	6- 4-86	a635.30	-

† Operated as a continuous-record station.

a Elevation, in feet, above National Geodetic Vertical Datum of 1929.

Annual maximum stage and (or) discharge during water year 1986--Continued

Station no.	Station name	Location	Drainage area (mi²)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft³/s)
		Guadalupe River basin--Continued					
08178500	San Pedro Creek at Furnish Street, San Antonio, Tex.	Lat 29°24'22", long 98°30'38", Bexar County, at bridge on Furnish Street in San Antonio.	-	1973-86	6- 4-86	a616.28	-
08178550	San Antonio River at Ashley Street (Berg's Mill), San Antonio, Tex.	Lat 29°20'04", long 98°27'20", Bexar County, at bridge on Ashley Street in San Antonio.	-	1973-86	6- 4-86	a520.75	-
		Nueces River basin					
08207220	Rutledge Hollow at 7th Street, Poteet, Tex.	Lat 29°02'07", long 98°34'18", Atascosa County, in city of Poteet at 7th Street and 2.0 mi above Atascosa River.	9.74	1979-86	6- 5-86	a417.72	-
08207300	Atascosa River at U.S. Highway 281, Pleasanton, Tex.	Lat 28°57'44", long 98°28'51", Atascosa County, at bridge on U.S. Highway 281 in Pleasanton.	-	1973-86	6- 5-86	a343.57	-
08211500	Nueces River at Calallen, Tex.	Lat 27°52'34", long 97°37'32", Nueces County, at the Cunningham pumping station in Corpus Christi, and 0.4 mi upstream from Calallen dam.	16,920	e1915-50, 1983-86	11- 1-85	8.06	2,630
		San Fernando Creek basin					
08212300	Tranquitas Creek at Kingsville, Tex.	Lat 27°31'33", long 97°52'02", Kleberg County, at bridge on U.S. Highway 77 Business Route in Kingsville, 4.9 mi above San Fernando Creek, and 5.9 mi downstream from Tranquitas Dam.	48.5	1965-82, 1984-86	6- 8-86	2.68	-

a Elevation, in feet, above National Geodetic Vertical Datum of 1929.
e Gage heights only during 1918-50.

Measurements of streamflow at points other than gaging stations of partial-record stations are given in the following table:

Discharge measurements made at miscellaneous sites during water year 1986

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
Colorado River basin						
Centralia Draw	Middle Concho River	Lat 101°29'00", long 31°25'25", Reagan County, near Stiles, north of Big Lake, Tex.	-	-	10- 5-85	5.0
Middle Concho	Concho River	Lat 101°05'45", long 31°25'30", Irion County, on Highway 163 south of Sterling City.	-	-	9-15-85	[a]10.0
					10- 5-85	3,790
					10- 6-85	1,670
Guadalupe River basin						
San Antonio Springs	San Antonio River	Lat 29°27'56", long 98°28'04", Bexar County, just below Hildebrandt Street in San Antonio, Tex.	-	1951-52,	1-28-86	7.8
				1959-62,	1-28-86	6.0
				1972,	3-21-86	0
				1974-77,	6-27-86	27
				1979-85	7-10-86	0
San Pedro Springs	San Pedro Creek	Lat 29°26'42", long 98°30'06", Bexar County, at San Pedro Park in San Antonio, Tex.	-	1933-35,	1-28-86	6.3
				1951-52,	1-28-86	5.2
				1958-61,	3-21-86	4.2
				1966,	4- 7-86	2.2
				1971,	4-14-86	1.6
				1974-77,	4-15-86	1.4
				1979-85	4-29-86	0
					5- 6-86	.07
					6-27-86	9.9
					7-10-86	5.5
					7-17-86	5.7
Rio Grande basin						
Mud Springs 1/	Mud Creek	Lat 29°27'10", long 100°37'30", Kinney County, on Mays Ranch and about 16 mi northwest of Brackettville, Tex.	-	1939-41,	10- 3-85	8.33
				1952-53,	11-13-85	8.47
				1962,	12-10-85	7.78
				1965-86	1-14-86	7.20
					2-19-86	7.48
					3-11-86	6.61
					4-08-86	5.67
					5-13-86	4.71
					6-10-86	8.48
					7- 9-86	10.4
					8-12-86	12.2
					9-11-86	12.2
Pinto Springs 1/	Pinto Creek	Lat 29°24'10", long 100°27'15", Kinney County, on C. C. Belcher Ranch and 7.5 mi northwest of Brackettville, Tex.	-	1939-41,	10- 3-85	0
				1952-53,	11-13-85	0
				1965-86	12-10-85	0
					4- 8-86	0
					5-13-86	0
					6-10-86	0
					7- 8-86	0
					8-12-86	0

1/ Measurements by International Boundary and Water Commission.

[a] Estimated.

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons